

FINAL REPORT

**SPS-1 PROJECT 0501
STRATEGIC STUDY OF STRUCTURAL
FACTORS FOR FLEXIBLE PAVEMENTS
US-63 NORTHBOUND
CRAIGHEAD COUNTY, ARKANSAS**

FHWA/LTPP

SOUTHERN REGION COORDINATION OFFICE

OCTOBER 1996



BRENT RAUHUT ENGINEERING INC.

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FINAL REPORT - SPS-1 PROJECT 0501

STRATEGIC STUDY OF STRUCTURAL FACTORS FOR FLEXIBLE PAVEMENTS US-63, NORTHBOUND CRAIGHEAD COUNTY, ARKANSAS

INTRODUCTION

The Strategic Highway Research Program (SHRP), in conjunction with the Federal Highway Administration (FHWA) developed the Long Term Pavement Performance (LTPP) program to study the various factors that affect pavement performance. These studies are designed to provide information about varying pavement design, materials and environmental effects on pavement performance.

The objective of the SPS-1 experiment is discussed below. This project is one of sixteen projects located across the United States. This SPS-1 project is located in the northbound lanes of US-63, southeast of Jonesboro, Arkansas. The letting date was November 1992 and construction began in March 1993. This report covers the site-selection, coordination and monitoring activities for all phases of construction of the SPS-1 project. Any detailed information not found in this report may be found in the LTPP data base on the Regional Information Management System (RIMS) at the Southern Region Coordination Office (SRCO), in Austin, Texas, and the National Information Management System (NIMS) in Washington, DC.

SPS-1 General Experiment Design

The objective of the SPS-1 study is to enhance understanding of the strategic factors that influence the performance of flexible pavements. This SPS-1 project addresses factors including drainage, base type and thickness, and asphalt surface thickness as they relate to pavement performance. The experiment design for the SPS-1 experiment is shown in Table 1. The SPS-1 in Arkansas fulfills the requirements for the wet no-freeze climatic region with coarse-grained subgrade (Column "Q"). Twelve distinct test sections are located at the project site, varying in thickness and layer type. A detailed layout of each of the twelve sections is shown in Table 2 and Figure 1.

For additional information on the experiment design for SPS-1, please refer to "Specific Pavement Studies Experiment Design and Research Plan for Experiment SPS-1, Strategic Study of Structural Factors for Flexible Pavements", dated February 1990.

Selection/Nomination of US-63

The SPS-1 project on US-63 in Craighead County, Arkansas was nominated on 4 May 1992. Appendix A includes the project nomination and information forms with pertinent correspondence. This project is a four-lane divided highway with 12-foot test sections, 10-foot outside shoulders and a 4-foot shoulder along the passing lane. The estimated traffic includes 20% heavy trucks, with an annual 170,000 ESALs. The project is located southeast of Jonesboro, Arkansas.

TABLE 1. EXPERIMENT DESIGN FOR SPS-1

PAVEMENT STRUCTURE COMBINATIONS			
DRAINAGE	BASE TYPE	TOTAL BASE THICK	SURF. THICK
NO	AGG	8"	4"
			7"
		12"	4"
			7"
	ATB	8"	4"
			7"
		12"	4"
			7"
	ATB 4" AGG	8"	4"
			7"
		12"	4"
			7"
YES	PATB AGG	8"	4"
			7"
		12"	4"
			7"
		16"	4"
			7"
		8"	4"
			7"
	ATB PATB	12"	4"
			7"
		16"	4"
			7"

FACTORS FOR MOISTURE, TEMPERATURE, SUBGRADE TYPE AND LOCATION																
WET								DRY								
FREEZE				NO FREEZE				FREEZE				NO FREEZE				
FINE		COARSE		FINE		COARSE		FINE		COARSE		FINE		COARSE		
J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
		K1		M1		O1		Q1		S1		U1		W1		Y1
J1			L1		N1		P1		R1		T1		V1		X1	
J2			L2		N2		P2		R2		T2		V2		X2	
		K2		M2		O2		Q2		S2		U2		W2		Y2
J3			L3		N3		P3		R3		T3		V3		X3	
		K3		M3		O3		Q3		S3		U3		W3		Y3
		K4		M4		O4		Q4		S4		U4		W4		Y4
J4			L4		N4		P4		R4		T4		V4		X4	
J5			L5		N5		P5		R5		T5		V5		X5	
		K5		M5		O5		Q5		S5		U5		W5		Y5
		K6		M6		O6		Q6		S6		U6		W6		Y6
J6			L6		N6		P6		R6		T6		V6		X6	
J7			L7		N7		P7		R7		T7		V7		X7	
		K7		M7		O7		Q7		S7		U7		W7		Y7
		K8		M8		O8		Q8		S8		U8		W8		Y8
J8			L8		N8		P8		R8		T8		V8		X8	
		K9		M9		O9		Q9		S9		U9		W9		Y9
J9			L9		N9		P9		R9		T9		V9		X9	
		K10		M10		O10		Q10		S10		U10		W10		Y10
J10			L10		N10		P10		R10		T10		V10		X10	
J11			L11		N11		P11		R11		T11		V11		X11	
		K11		M11		O11		Q11		S11		U11		W11		Y11
J12			L12		N12		P12		R12		T12		V12		X12	
		K12		M12		O12		Q12		S12		U12		W12		Y12

AGG = Dense-graded Untreated Aggregate Base

ATB = Dense-graded Asphalt Treated Base

PATB = 4" Thick Open-graded Permeable Asphalt-treated Drainage Layer Underneath ATB or Over AGG Base

4" AGG = 4" Thick Dense-graded Untreated Aggregate Base Layer Underneath ATB

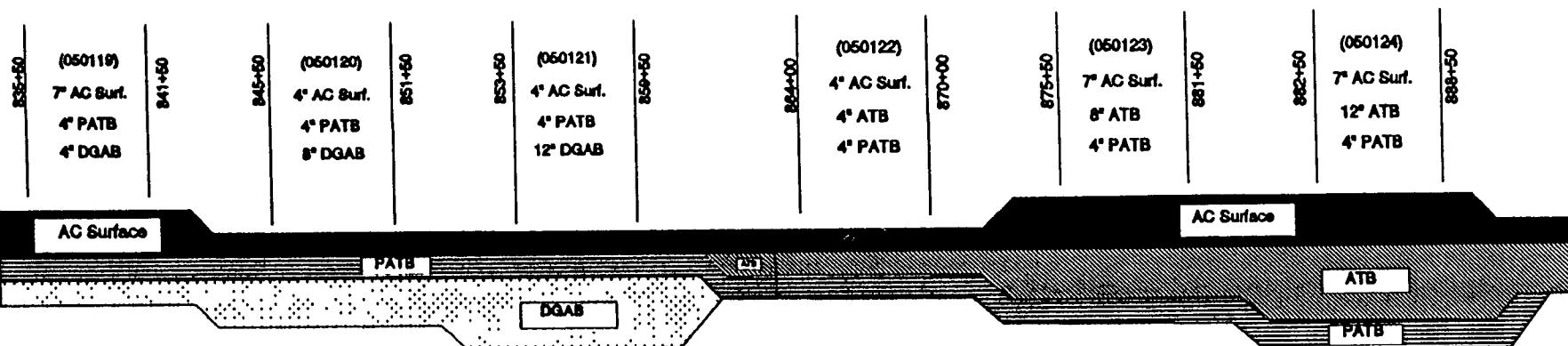
TABLE 2. TEST SECTION LAYOUT
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS

Section (Cell ID)	Cross Section	Begin Station	End Station
050119 (Q19)	7" AC Surface	835 + 50	841 + 50
	4" PATB		
	4" DGAB		
050120 (Q20)	4" AC Surface	845 + 50	851 + 50
	4" PATB		
	8" DGAB		
050121 (Q21)	4" AC Surface	853 + 50	859 + 50
	4" PATB		
	12" DGAB		
050122 (Q22)	4" AC Surface	864 + 00	870 + 00
	4" ATB		
	4" PATB		
050123 (Q23)	7" AC Surface	875 + 50	881 + 50
	8" ATB		
	4" PATB		
050124 (Q24)	7" AC Surface	882 + 50	888 + 50
	12" ATB		
	4" PATB		

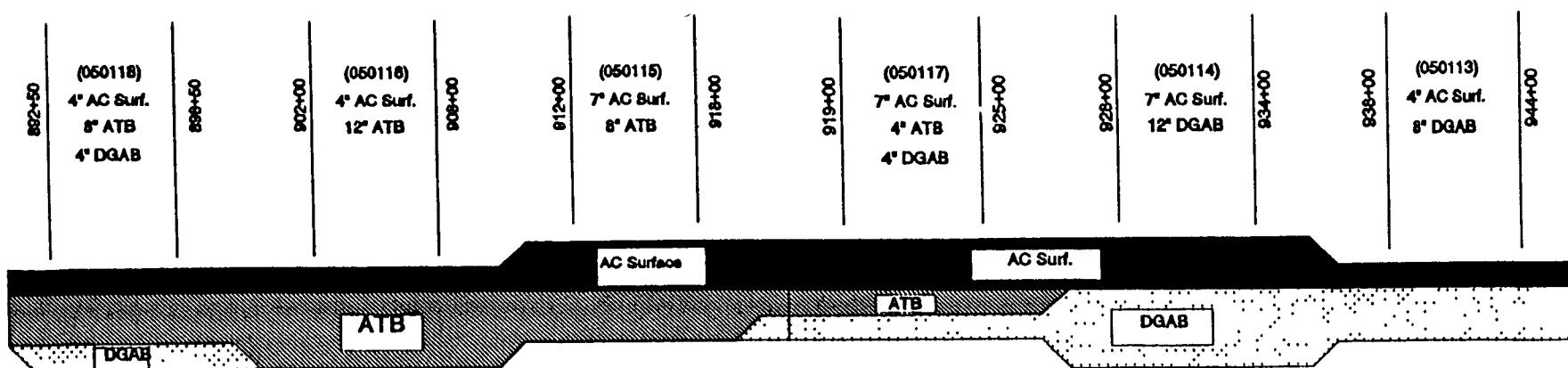
TABLE 2. TEST SECTION LAYOUT
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Section (Cell ID)	Cross Section	Begin Station	End Station
050118 (Q18)	4" AC Surface	892 + 50	898 + 50
	8" ATB		
	4" DGAB		
050116 (Q16)	4" AC Surface	902 + 00	908 + 00
	12" ATB		
050115 (Q15)	7" AC Surface	912 + 00	918 + 00
	8" ATB		
050117 (Q17)	7" AC Surface	919 + 00	925 + 00
	4" ATB		
	4" DGAB		
050114 (Q14)	7" AC Surface	928 + 00	934 + 00
	12" DGAB		
050113 (Q13)	4" AC Surface	938 + 00	944 + 00
	8" DGAB		

Figure 1. LAYOUT OF TEST SECTIONS
ARKANSAS SPS-1, US-63 NBL
Craighead County, Arkansas



5



There were no driveways or ramps located within the project that would disrupt the stream of traffic. Of the twelve sections, all were constructed on areas that contained fill. Detailed plan/profiles are provided with the nomination forms and subsurface exploration results.

The project was accepted for inclusion in this experiment by the FHWA on 11 June 1992. Letting occurred in November 1992 to Delta Asphalt Paving Contractors.

PRECONSTRUCTION MONITORING

Since this construction project included new construction on a new alignment, there was very little preconstruction monitoring required. Construction of the embankment/subgrade materials began in March 1993 and proceeded through the summer of 1993. Preconstruction FWD testing in accordance with Protocol P59 was conducted on top of the prepared subgrade in July 1993. Material Sampling and Testing of the subgrade and dense graded aggregate base (DGAB) was conducted in October 1993. Elevation measurements were obtained on top of the prepared subgrade and the DGAB layers, prior to paving. There were no deviations or unusual circumstances encountered prior to construction.

CONSTRUCTION

Placement of the DGAB materials was completed in early October 1993 and was followed almost immediately with placement of fabric, PATB and ATB materials. During placement of the edge drains, observations revealed that the contractor had failed to leave sufficient fabric to overlap the pavement as shown in the specifications. After some discussion, the contractor used a trencher to remove the edge drain and it was replaced in accordance with the project and LTPP specifications.

During October, there were significant delays in paving over the exposed DGAB surface due to rain. Rain delays were also encountered during the asphalt paving operations. In all cases, the contractor prevented equipment movement on the wet surfaces and waited for the surface to dry before resuming operations.

Through the construction process, the asphalt plant functioned well. This was a very new, fully automated plant, so there were no problems encountered with its operation.

In general, construction operations and paving proceeded smoothly. There were no other deviations or unusual occurrences during construction.

POSTCONSTRUCTION MONITORING

Upon completion of construction of the SPS-1 project, it was necessary to monitor the performance of the pavement. This involved manual surveys, FWD testing and profilometer testing. LTPP directives indicate that the manual surveys and profilometer testing need to be performed biennially. FWD testing is to be performed annually. The first set of monitoring was performed in March 1994.

Material Sampling and Testing

Postconstruction coring was carried out in October 1994. The coring was performed successfully with a 24-inch long drill bit with a 4-inch diameter. Specific samples and the corresponding tests to be performed are designated in the materials sampling plan located in Appendix C.

SUMMARY

Having completed the observations of the construction for this SPS-1 project, located on US-63, southeast of Jonesboro, Arkansas, it appears that this project will contribute significantly to the LTPP objectives by providing valuable information about the structural factors affecting flexible pavements. The efforts of the Arkansas SHTD, and their willingness to participate in this study, is greatly appreciated. Special thanks goes to Bill Staggs and Brent Watkins, whose work made this project possible. We also want to express our appreciation to Delta Asphalt Paving Contractors for their hard work in completing a quality job in a timely fashion.

Currently, monitoring efforts are scheduled and we will continue noting changes in the surface distress, surface profile and structural capacity, and compare the data with other projects of this nature around the country in an attempt to improve existing structural design methods.

APPENDIX A

SITE BACKGROUND DATA

Brent Rauhut Engineering Inc.



August 26, 1992

Mr. Monte Symons
FHWA, LTPP Division
Turner-Fairbank Highway Research Center
6300 Georgetown Pike, Room F-215
McLean, Virginia 22101

Subject: Arkansas SPS-1 Project

Dear Monte:

On June 11, 1992 we received a memorandum from Amir Hanna regarding the nomination of an SPS-1 project in Arkansas. This memorandum indicated that the proposed test site was suitable for the SPS-1 experiment cell for pavements "on fine grained soil" in the wet no-freeze environmental zone. The memorandum goes on to state "we request Arkansas SHTD concurrence to construct Test Sections 13-24 (Site 0) at this site...". In our review of the project characteristics, and nomination forms originally submitted, we found that this project will be constructed over a sand subgrade, thereby making it a coarse grained material. This was addressed in our letter transmitting the nomination forms and candidate projects on May 13, 1992 under Item 3.

As this project is currently in the design phase at the Arkansas SHTD, we have finalized the draft copy of the sampling and testing plan, which you should receive in the very near future. In order to draft this plan we had to select which test sections would be constructed to meet the experiment needs. Given the project characteristics, we have configured the test sections to meet the requirements of Test Sections 13-24, Site Q.

If you have any questions or comments regarding the change which we have recommended, please contact me at your earliest convenience. I anticipate that there will be much activity pertaining to this project in the near future, as the project moves through the design phase and nears construction. Thank you for your consideration in these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark P. Gardner".

Mark P. Gardner
Project Engineer

cc: Homer Wheeler

MPG/mkd

FH8\LETTERS\

STRATEGIC HIGHWAY RESEARCH PROGRAM

NATIONAL ACADEMY OF SCIENCES / NATIONAL RESEARCH COUNCIL
818 Connecticut Avenue, N.W., 4th Floor, Washington D.C. 20006
SHRP Telecopier: (202) 223-2875 Verification: (202) 334-3774

MEMORANDUM

June 11, 1992

TO: Homer Wheeler, Southern Region
FROM: Amir N. Hanna *(Signature)*
SUBJECT: Nomination for an SPS-1 in Arkansas

We have completed the review of the nomination from Arkansas State Highway and Transportation Department for an SPS-1 site on U.S. 63 South of Highway 69 Spur (Arkansas SH&TD submittal of May 4, 1992 and Brent Rauhut Engineering Inc. letter of May 13, 1992).

The proposed test site is suitable for the SPS-1 experimental cell for pavements on fine-grained soil in the "wet-no freeze" environmental zone. Therefore, the test site is acceptable and will be included in the experiment unless discrepancies arise during site verification. Also, this approval stipulates the agreement of Arkansas SH&TD to conform to all design and participation requirements for this experiment. To achieve the intended objectives of the study, we request Arkansas SH&TD concurrence to construct Test Sections 13 through 24 (Site O) at this site as the complementary Test Sections 1 through 12 (Site N) will be constructed by another state.

Please inform Arkansas State Highway and Transportation Department of the acceptance of the proposed test site and proceed with coordination of related activities. Also, please furnish copies of the sampling and testing plan, cross sections and special provisions pertaining to the test sections for our review in a timely manner. Should you, your RCOC's staff or Arkansas SH&TD personnel need clarification of any construction or implementation details for this other SPS projects, please let us know.

cc: N.F. Hawks
P-001B (S. Tayabji)

Brent Rauhut Engineering Inc.



May 13, 1992

Dr. Amir Hanna
Strategic Highway Research Program
818 Connecticut Avenue NW - 4th Floor
Washington, DC 20006

Subject: Potential SPS-1 Candidate Project from Arkansas.

Dear Amir,

This letter transmits to you a nominated candidate project for the SPS-1 Experiment, as submitted by Mr. Bill Staggs with the Arkansas Highway and Transportation Department. Please find enclosed a copy of the May 4 transmittal letter submitted by Mr. Staggs, copies of the candidate project nomination forms, and a reduced set of plan sheets. After review of this project, and consideration of the project's selection criteria, I submit the following comments for your consideration:

1. The project will include new construction of the entire roadway.
2. The construction project is of sufficient length to accommodate in excess of twelve 500' long test sections with associated sampling and transition areas.
3. Subgrade soils information provided by the AHTD indicate A-2-4 and A-3 soil types along the entire length of the project. These are silty or clayey gravel and sand, and fine sand respectively.
4. The horizontal and vertical alignments are relatively straight and have a uniform vertical grade. The maximum horizontal curvature is 1°, while there is little or no vertical grade.
5. From the plans provided, it appears all of the test sections will be located on shallow fill.
6. Information on when the test sections will be opened to traffic is not currently available. Efforts will be made to ensure that the test sections are constructed and opened to traffic at approximately the same time.

7. In my preliminary layout, culverts, pipes, and other substructures have been avoided within the limits of each test section.
8. As provided in the candidate project nomination forms, the estimated 18 kip ESAL rate in the study lane is 170,000/year.
9. There are no indications in the plan sheets of obstructions or intersections which would effect the uniformity of traffic flow over the test sections.

On the attached plan set, potential test section locations have been identified in both the northbound and southbound lanes. Possible test section locations are numbered sequentially in the direction of travel. Once we have reached agreement on the acceptability of the project, test section locations will be finalized through coordination with Bill Staggs of the AHTD.

Given these comments, it is our recommendation that this project be considered as a viable candidate for the SPS-1 Experiment. We await your comments and suggestions after review of the information provided.

Sincerely,



Mark P. Gardner, P.E.
Project Engineer, SRCO

MPG:dmj

Attachment: As stated.

cc.w/Attach: Shiraz Tayabji, PCS/Law

Homer Wheeler, SHRP RE-SRCO

cc.w/o Attach: Bill Staggs, AR-HTD

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Maurice Smith
Director
Telephone (501) 569-2000



P.O. Box 2261
Little Rock, Arkansas 72203
Telefax (501) 569-2400

May 4, 1992

Mr. Mark Gardner, P.E.
Brent Rauhut Engineering, Inc.
8240 Mopac, Suite 220
Austin, Texas 78759

Dear Mark:

Enclosed are completed "Candidate Project Nomination and Information" forms for proposed SPS-1 and SPS-2 Special Pavement Study sites.

Our preference of sites would be Hwy. 63 for the SPS-1 site and Hwy. 71 for the SPS-2 site. With the Hwy. 71 site we could easily include one of the frontage roads as an SPS-8 site.

Plans for each of the projects are also enclosed for your use under separate cover. If you need additional information, please advise.

Sincerely,

A handwritten signature in cursive script that appears to read "Bill Staggs".

Bill R. Staggs, P.E.
Pavement Management
Engineer

Enclosures: As stated

RECEIVED MAY - 6 1992

SPS-1 Nomination Form/26 Jan 90

SHEET A. SPS-1 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE ARKANSAS

SHRP SECTION NO _____

GENERAL PROJECT INFORMATION

PROJECT LOCATION

ROUTE NUMBER 63 200078 200013

ROUTE SIGNING Interstate U.S. State County

Other _____

PROJECT LOCATION Start Milepost _____ End Milepost _____
Start Station 480+00 End Station 590+00

DIRECTION OF TRAVEL North B. South B. West B. East B.

PROJECT LOCATION DESCRIPTION Beginning 2.0 miles south of intersection of Hwy 63 and Hwy 69 Spur and extending northwesterly 4.766 miles (New Location)

COUNTY _____

HIGHWAY AGENCY DISTRICT NUMBER _____

SHRP ENVIRONMENTAL ZONE

WET FREEZE WET NO-FREEZE DRY FREEZE DRY NO-FREEZE

SIGNIFICANT DATES

LATEST DATE OF APPROVAL NOTIFICATION FROM SHRP 7/1/92

CONTRACT LETTING DATE 11/92

ESTIMATED CONSTRUCTION START DATE 3/93

ESTIMATED DATE TEST SECTIONS OPENED TO TRAFFIC 6/93

ESTIMATED CONSTRUCTION COMPLETION DATE 5/93

*Det. Conf.
by Bull
5/12/92*

PROJECT DESCRIPTION

PROJECT TYPE New Route Removal and Reconstruction Parallel Roadway

Other _____

FACILITY Divided Undivided NUMBER OF LANES (One Way) 2

DESIGN TRAFFIC DATA

ANNUAL AVERAGE DAILY TRAFFIC (TWO DIRECTIONS) 7200

% HEAVY TRUCKS AND COMBINATIONS (OF AADT) 20

ESTIMATED 18K ESAL RATE IN STUDY LANE (1,000 ESAL/YR) 170

TOTAL DESIGN 18K ESAL APPLICATIONS IN DESIGN LANE

DESIGN PERIOD (Years) 20

SHEET B. SPS-1 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE ARKANSAS

SHRP SECTION NO _____

AGENCY'S PAVEMENT STRUCTURE DESIGN FOR SITE

LAYER ¹ NO.	LAYER ² <u>DESCRIPTION CODE</u>	MATERIAL TYPE ³ <u>CLASS CODE</u>	THICKNESS ⁴ <u>(INCHES)</u>	STRUCTURAL ⁵ <u>COEFFICIENT</u>
1	SUBGRADE (7)	<u>5 7</u>	— — —	— — —
2	<u>1 1</u>	<u>5 2</u>	<u>VARIABLES</u>	0. — —
3	<u>0 6</u>	<u>3 7</u>	<u>6. 0</u>	0. <u>2 0</u>
4	<u>0 5</u>	<u>2 8</u>	<u>6. 0</u>	0. <u>3 5</u>
5	<u>0 4</u>	<u>0 1</u>	<u>3. 0</u>	0. <u>4 4</u>
6	<u>0 3</u>	<u>0 1</u>	<u>1. 5</u>	0. <u>4 4</u>
7	— —	— —	— — —	0. — —
8	— —	— —	— — —	0. — —
9	— —	— —	— — —	0. — —

STRUCTURAL DESIGN METHOD 1972 AASHTO 1986 AASHTO Modified AASHTO

Other _____

AASHTO DESIGN RELIABILITY FACTORS R_f 90 S_r _____

OUTSIDE SHOULDER TYPE

 Turf Granular Asphalt Concrete Surface Treatment PCC Curb and Gutter Other _____OUTSIDE SHOULDER WIDTH (Feet) 10SUBSURFACE EDGE DRAINS Yes NoNOTES

1. Layer 1 is the natural occurring subgrade soil. The pavement surface will have the largest assigned layer number.

2. Layer description codes:

Surface Layer 03	Base Layer 05	Subgrade 07
Subsurface HMA .. 04	Subbase Layer 06	Embankment (Fill) 11

3. Refer to Tables 1 through 4 for material class codes.

4. If subgrade depth to a rigid layer is known, enter this depth for subgrade thickness, otherwise leave subgrade layer thickness blank.

5. Enter AASHTO structural layer coefficient value, as appropriately modified, used in pavement design or typical coefficient used by agency for this material. For the subgrade, enter either AASHTO soil support value or resilient modulus value (psi) used in design.

RECEIVED MAY - 6 1992 SPS-1 Nomination Form/26 Jan 90

SHEET C. SPS-1 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE ARKANSAS

SHRP SECTION NO _____

TEST SECTION LAYOUT

NUMBER OF TEST SECTIONS ENTIRELY ON: FILL ALL CUT _____

SHORTEST TRANSITION BETWEEN CONSECUTIVE TEST SECTIONS (Feet) _____

VERTICAL GRADE (Avg %) (+ upgrade; - downgrade) 0

HORIZONTAL CURVATURE (Degrees) Tangent 1-2 °

COMMENTS ON DEVIATIONS FROM DESIRED SITE LOCATION CRITERIA

OTHER SHRP TEST SECTIONS

DOES AGENCY DESIGN CONFORM TO GPS-1 OR GPS-2 PROJECT CRITERIA? YES NO

DISTANCE TO NEAREST GPS TEST SECTION ON SAME ROUTE (Miles) 8.0±

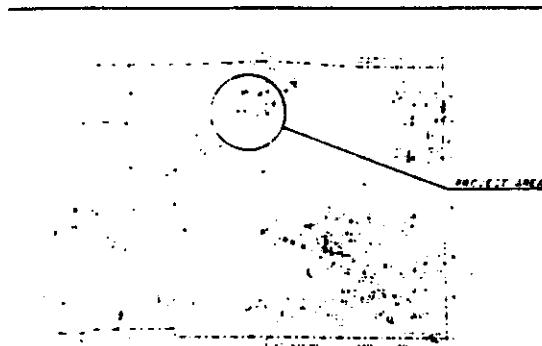
TEST SECTION NUMBER OF NEAREST GPS SECTION 053058

SUPPLEMENTAL TEST SECTIONS

IF SUPPLEMENTAL EXPERIMENTAL TEST SECTIONS ARE PROPOSED, COMPLETE THE FOLLOWING

TOTAL NUMBER OF SUPPLEMENTAL TEST SECTIONS _____

FACTORS TO BE INVESTIGATED _____



**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PROJECT
"A FULLY CONTROLLED ACCESS FACILITY"**

**SOUTH TRUMANN - HWY. 69
(GRADING & STRS.)
POINSETT COUNTY
JOB R00013**

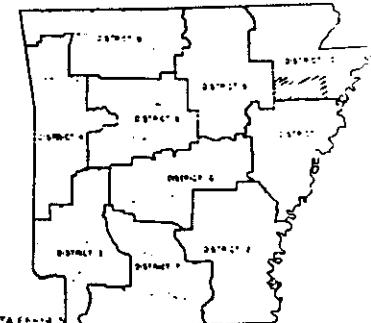
**ROUTE 63 SECTION 8
FAP F-033-1(44)
SCALE 1"=1,760'**



**NOTICE
HALF-SIZE PLANS**

GROSS LENGTH OF PROJECT	2404673 FEET OR 4.553	MILES
NET LENGTH OF ROADWAY	2374073 FEET OR 4.497	MILES
NET LENGTH OF BRIDGES	358.00 FEET OR 0.008	MILES
NET LENGTH OF PROJECTS	2404673 FEET OR 4.553	MILES

姓名	性别	年龄	民族	文化程度	政治面貌	工作单位	职务	工资待遇	家庭情况	主要社会关系	健康状况	其他情况
王伟	男	28	汉族	高中	群众	中行公司	经理	2000元	已婚	父母	良好	无



ARK. HWY. DIST. NO. 10

DESIGN DATA

DESIGN YEAR - - - - - 2010
 1990 ADT - - - - - 6470
 2010 ADT - - - - - 9850
 2010 DHV - - - - - 1084
 DIRECTIONAL DISTRIBUTION - 60%
 TRUCKS - - - 19 % DURING DHV
 DESIGN SPEED - - - - - 70 MPH

RECOMMENDED FOR APPROVAL

~~SECRET 625-14 554-0614~~

Digitized by srujanika@gmail.com

Digitized by srujanika@gmail.com

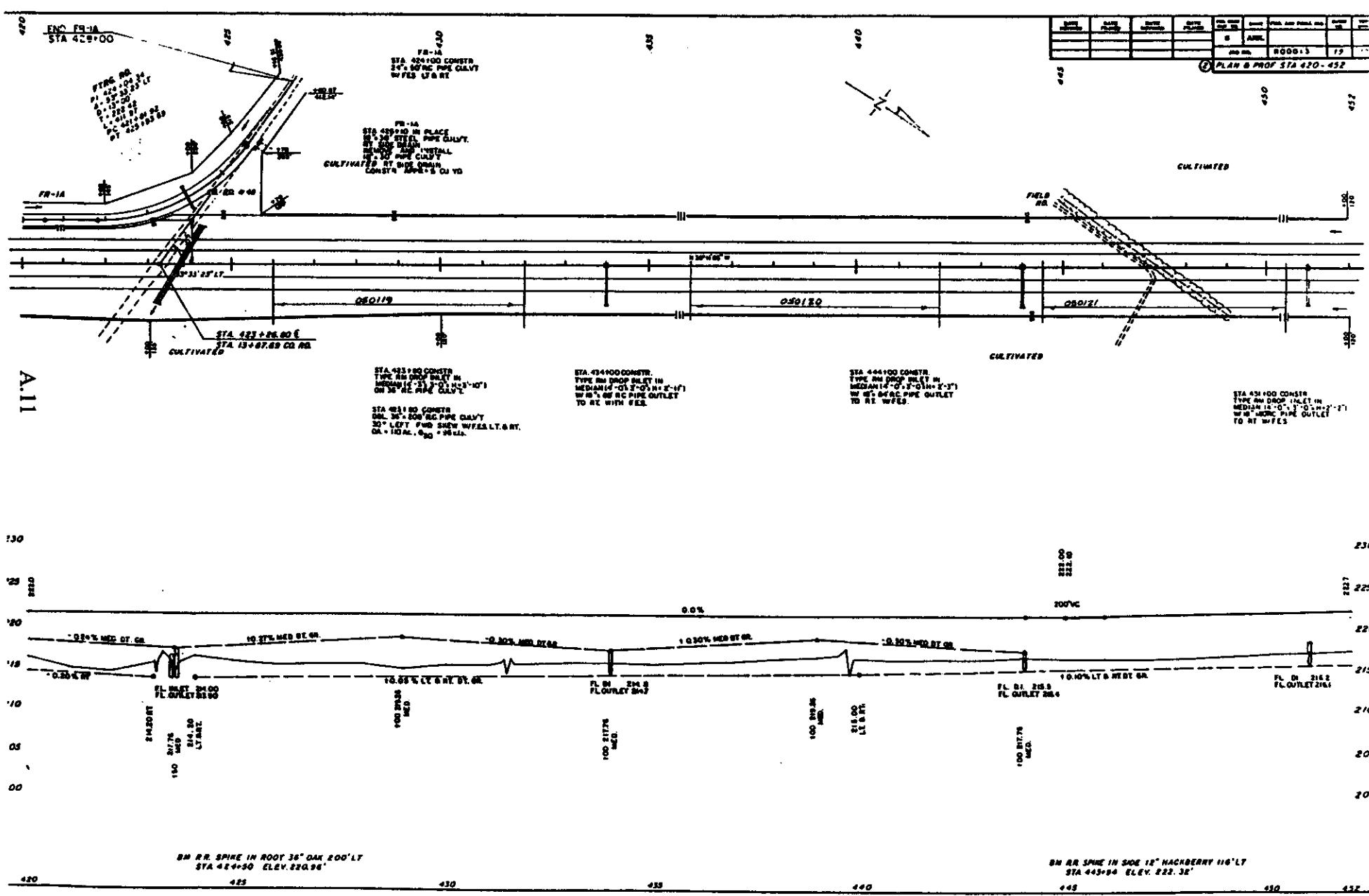
3. DEPARTMENT OF TRANSPORTATION

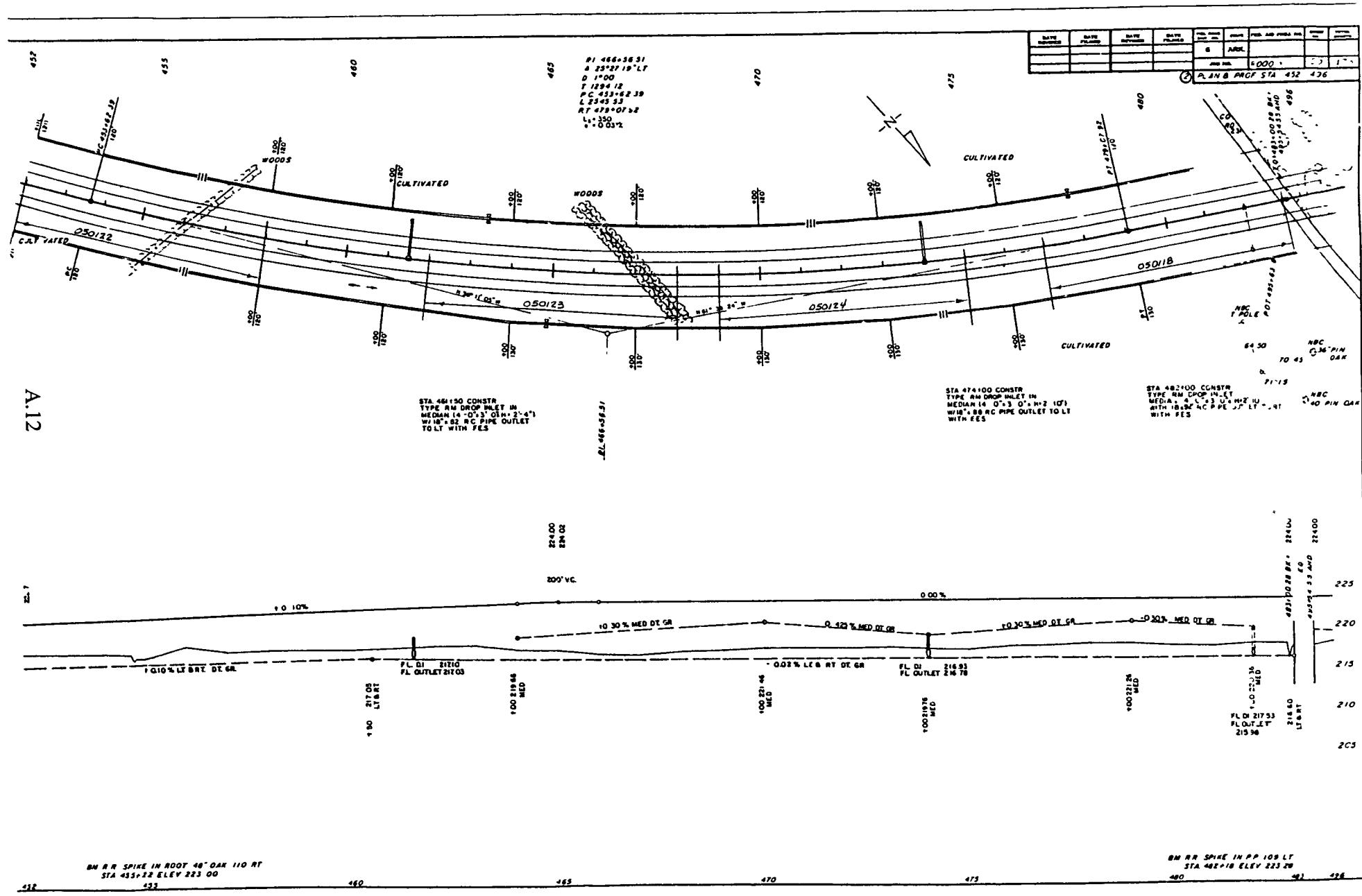
RECOMMENDED FOR APPROVAL

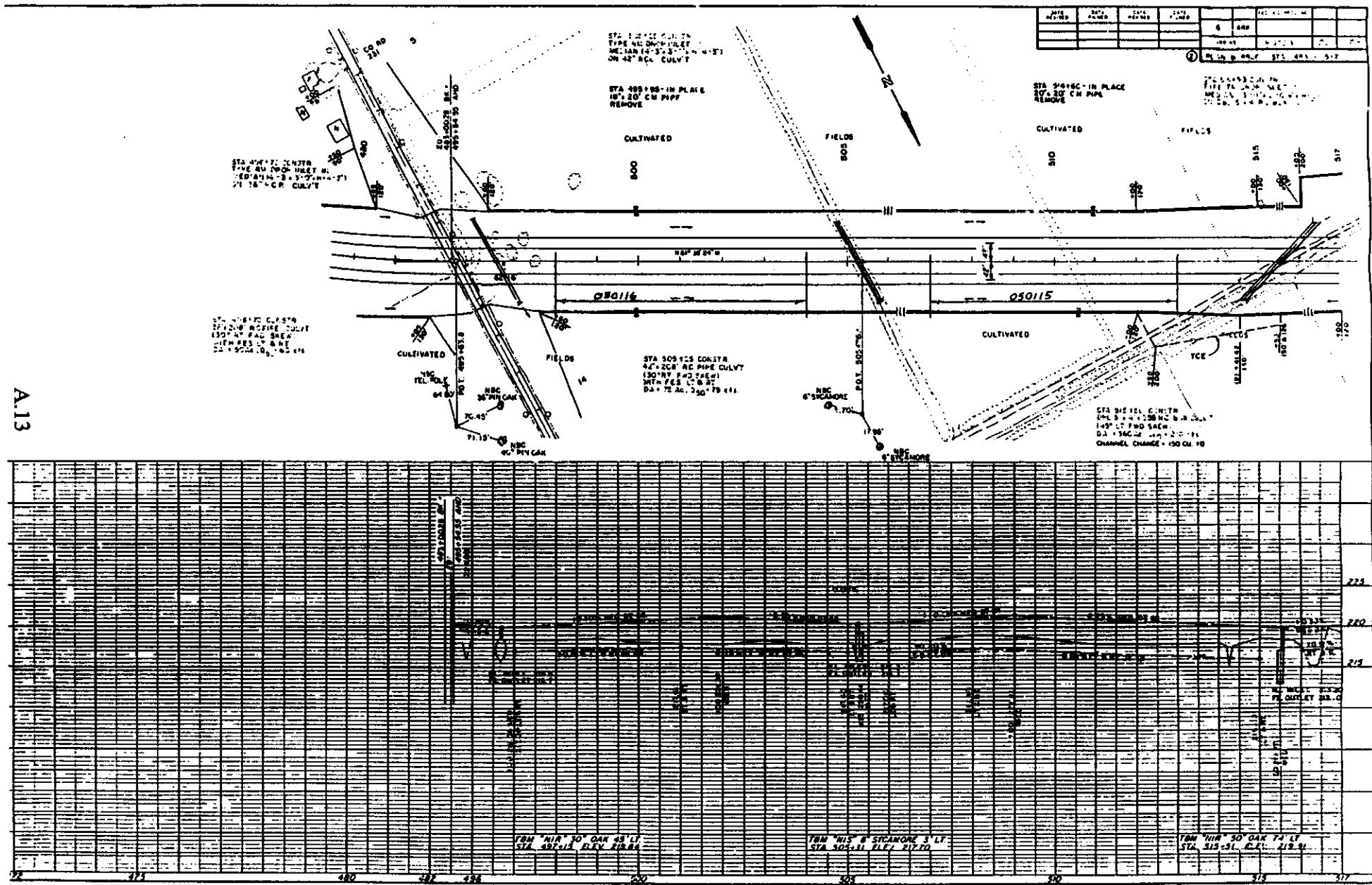
—

For more information about the study, please contact Dr. Michael J. Hwang at (319) 356-4530 or via email at mhwang@uiowa.edu.

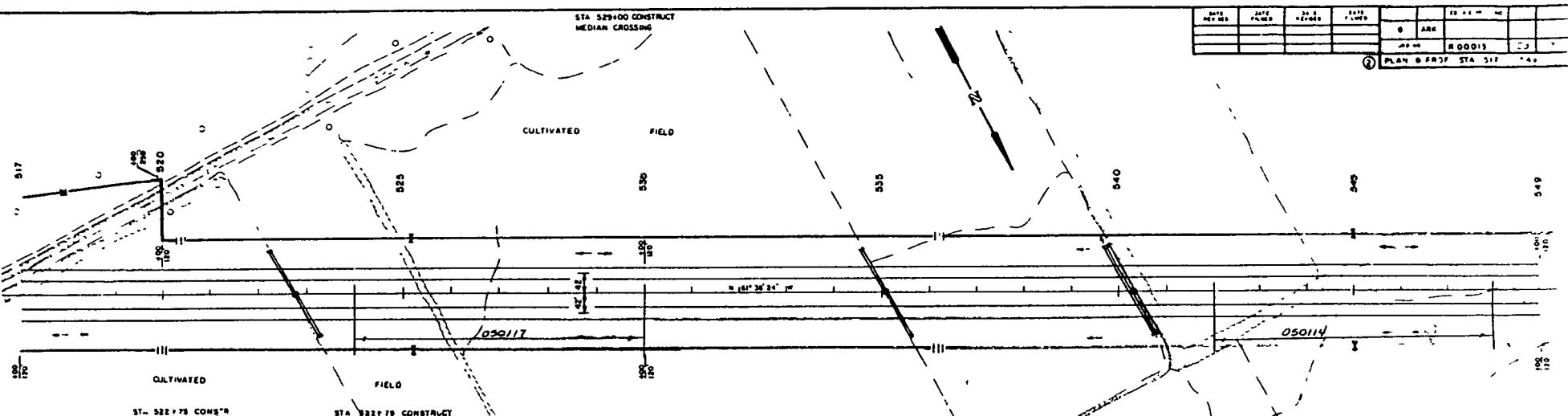
22 JASSE - NON PARIS



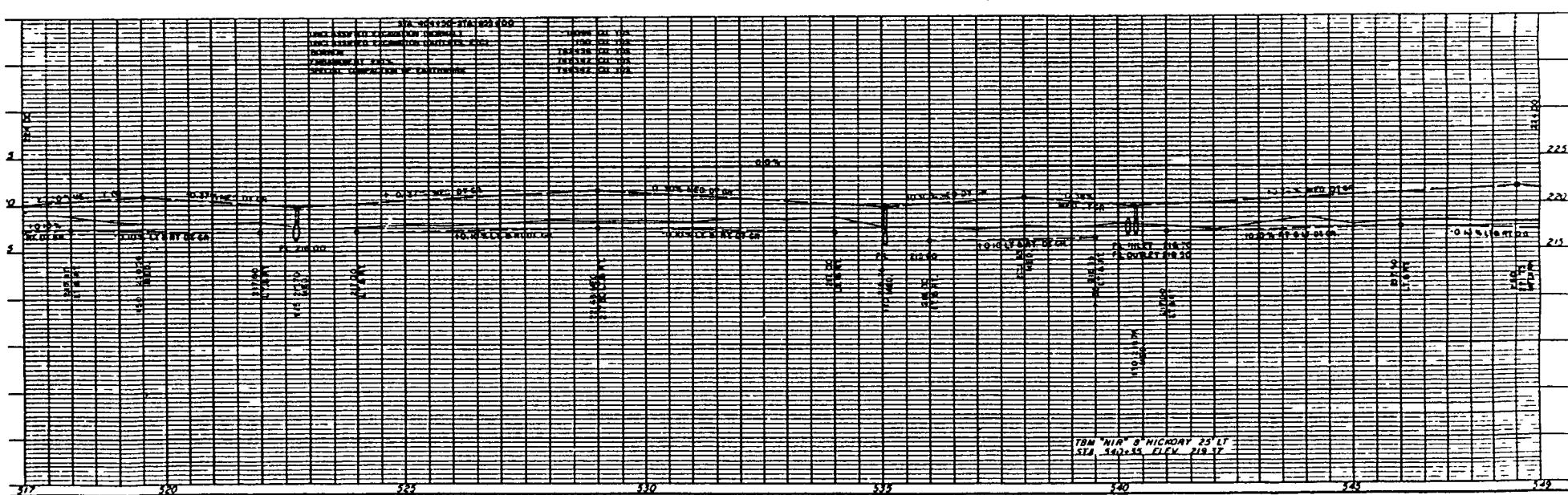


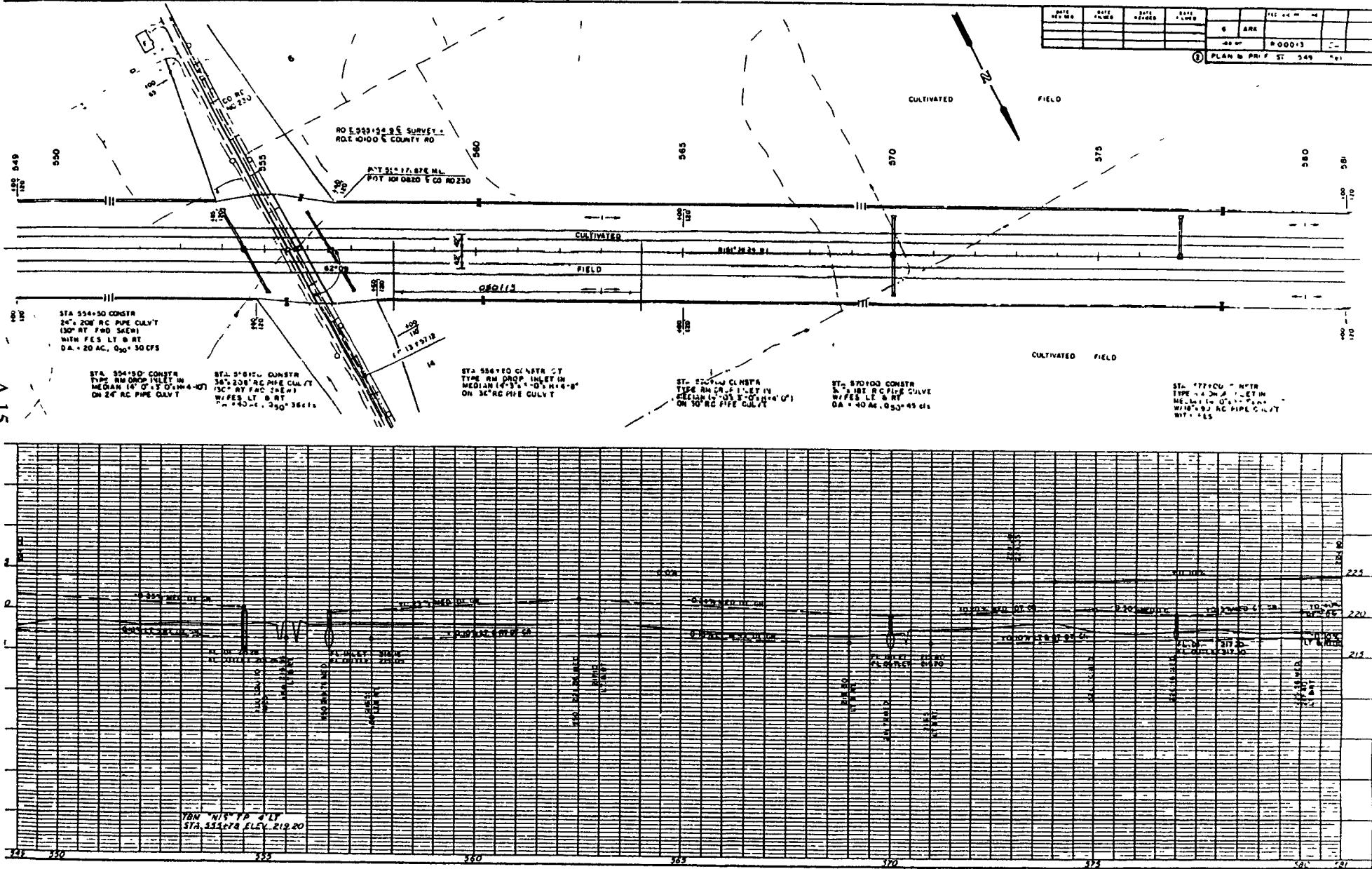


A.13



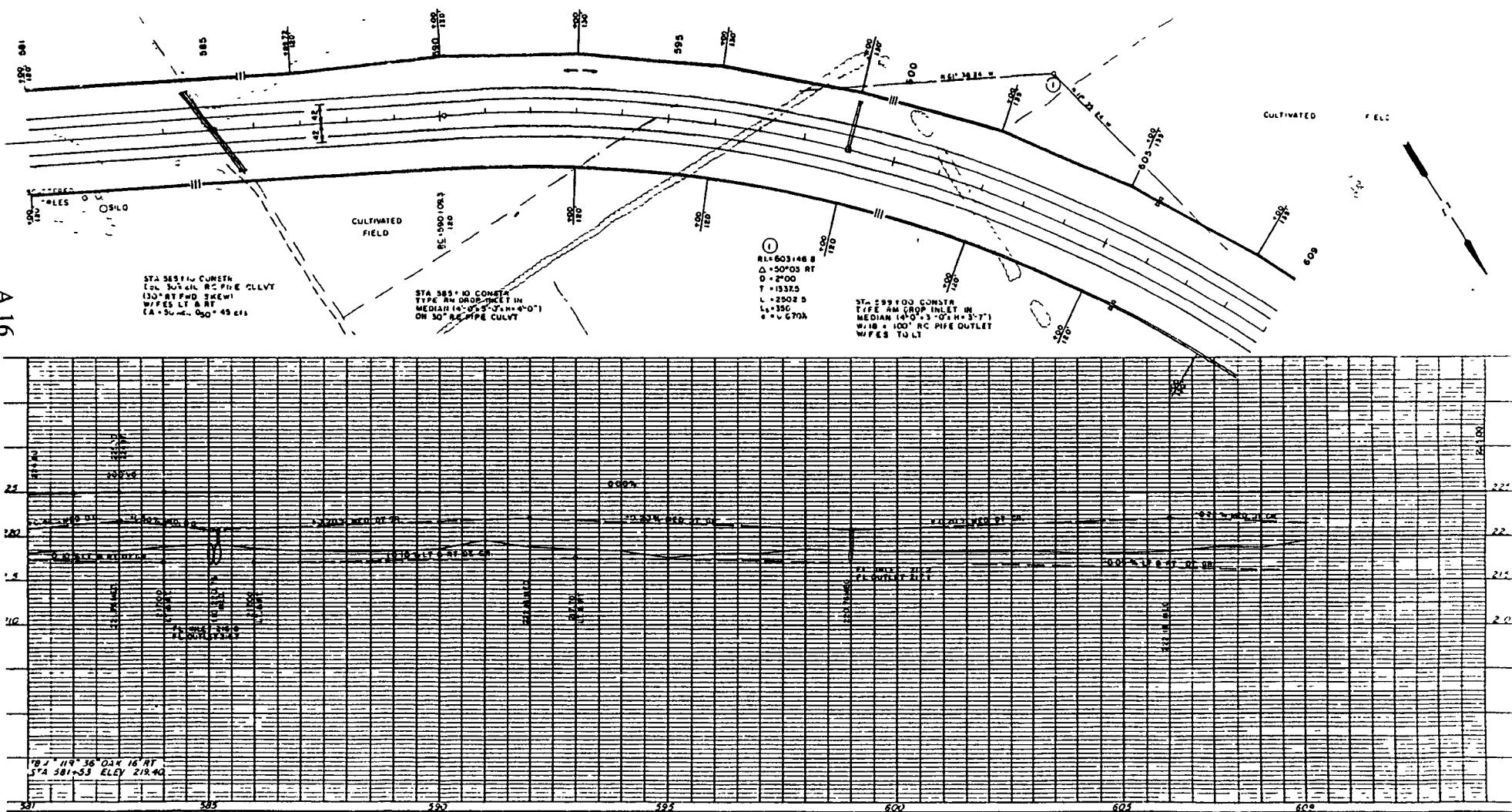
A.14





WIRE FENCE TYPE A							
STA 410+00	RT	MAIN LANES	TO STA	114+20	RT	CO RD 231	= 7462 LM FT
STA 424+50	LT	MAIN LANES	TO STA	8+70	RT	CO RD 231	= 5631 LM FT
STA 11 15	LT	CO RD 230	TO STA	114+00	RT	CO RD 230	= 5940 LM FT
STA 8+60	LT	CO RD 231	TO STA	8+70	RT	CO RD 230	= 6142 LM FT

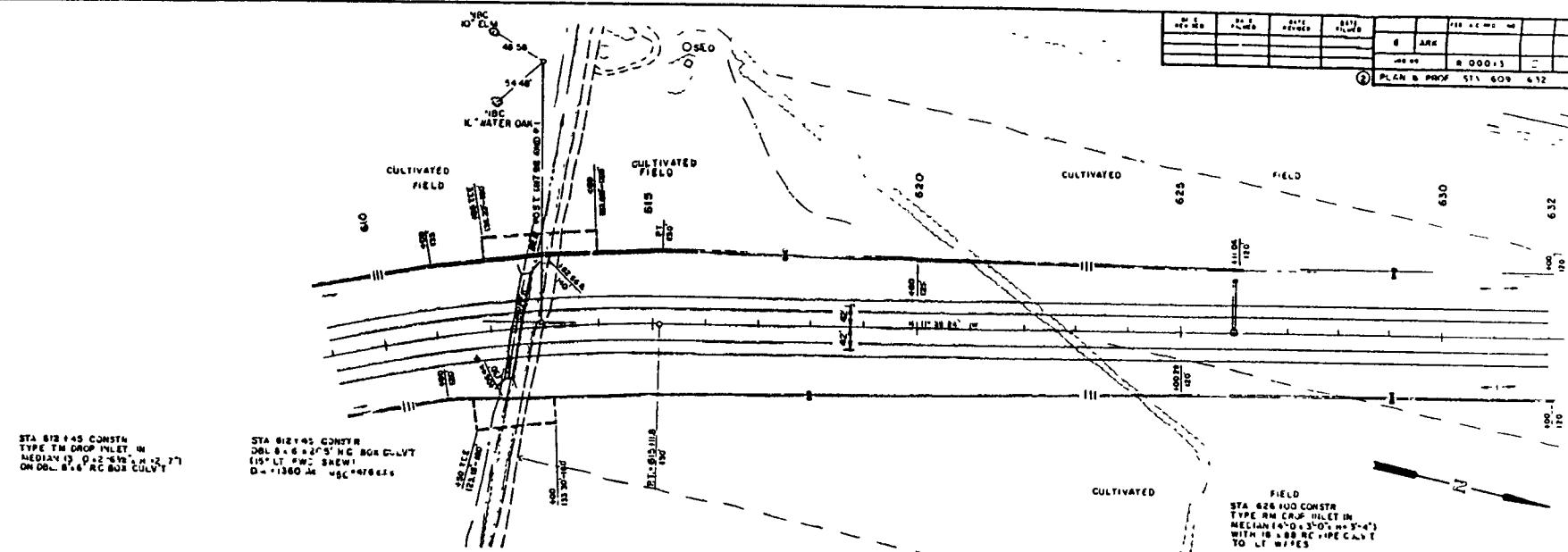
DATE REV'D	DATE PUBLISHED	DATE REVISED	DATE LICEN.		10-44-100	HC
				G	APP	
				40-44	8,000+3	
				(2)	P-1 % PAY ST-#01	5-1%



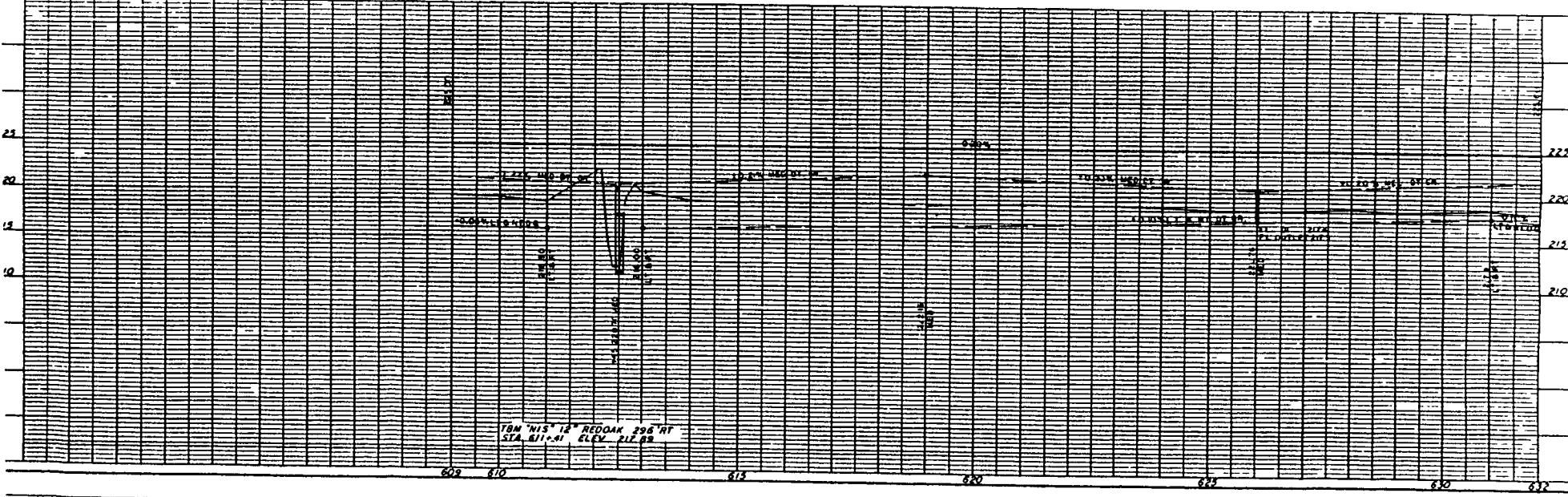
A.16

REV. NO.	DATE DRAWN	DATE CHECKED	DATE APPROVED	PER REC'D. NO.
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40-99	4.000±13			

(2) PLAN B PRICE STA 608 612



A.17



APPENDIX B

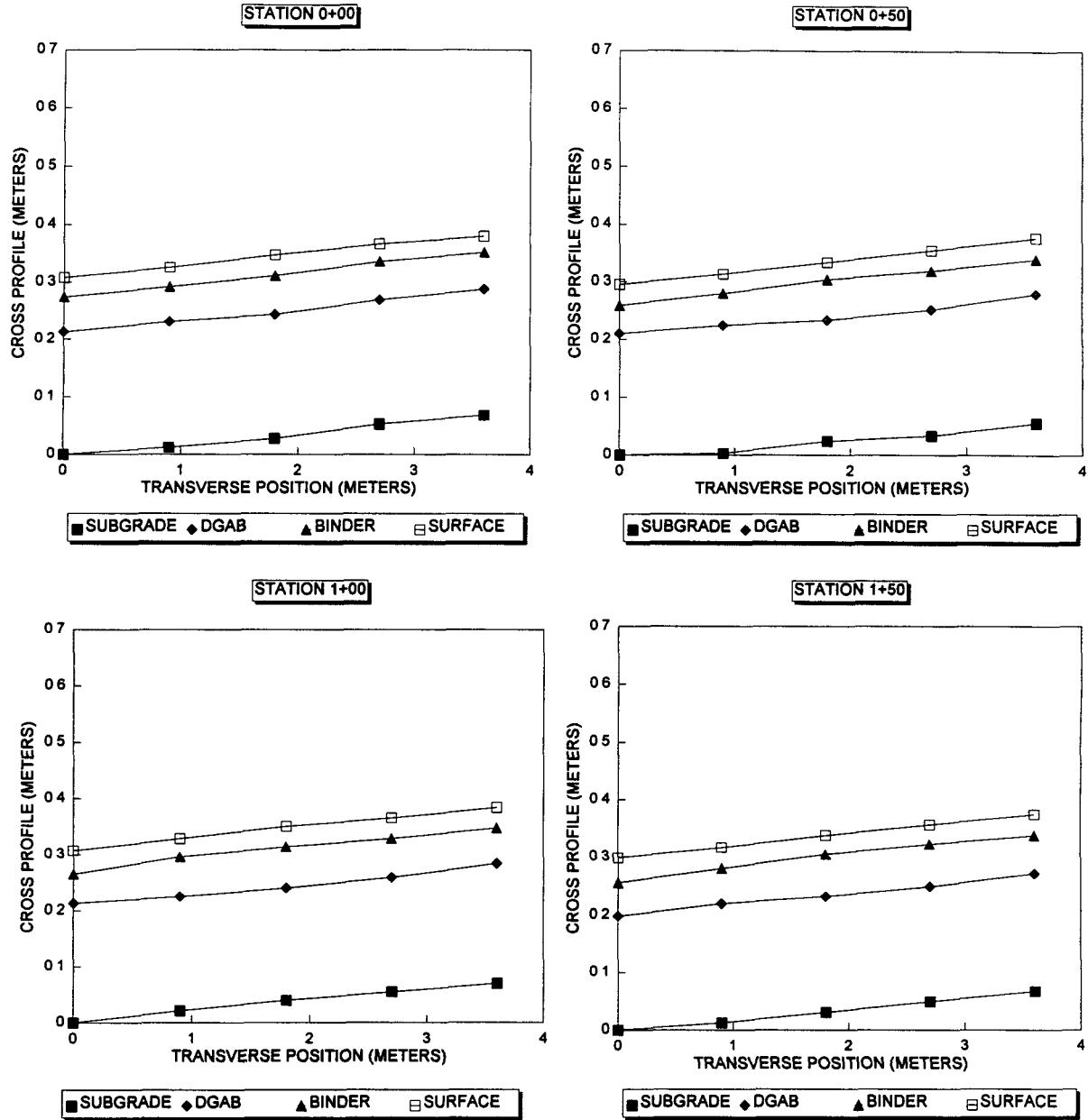
SURFACE PROFILE DATA

SECTION 050113

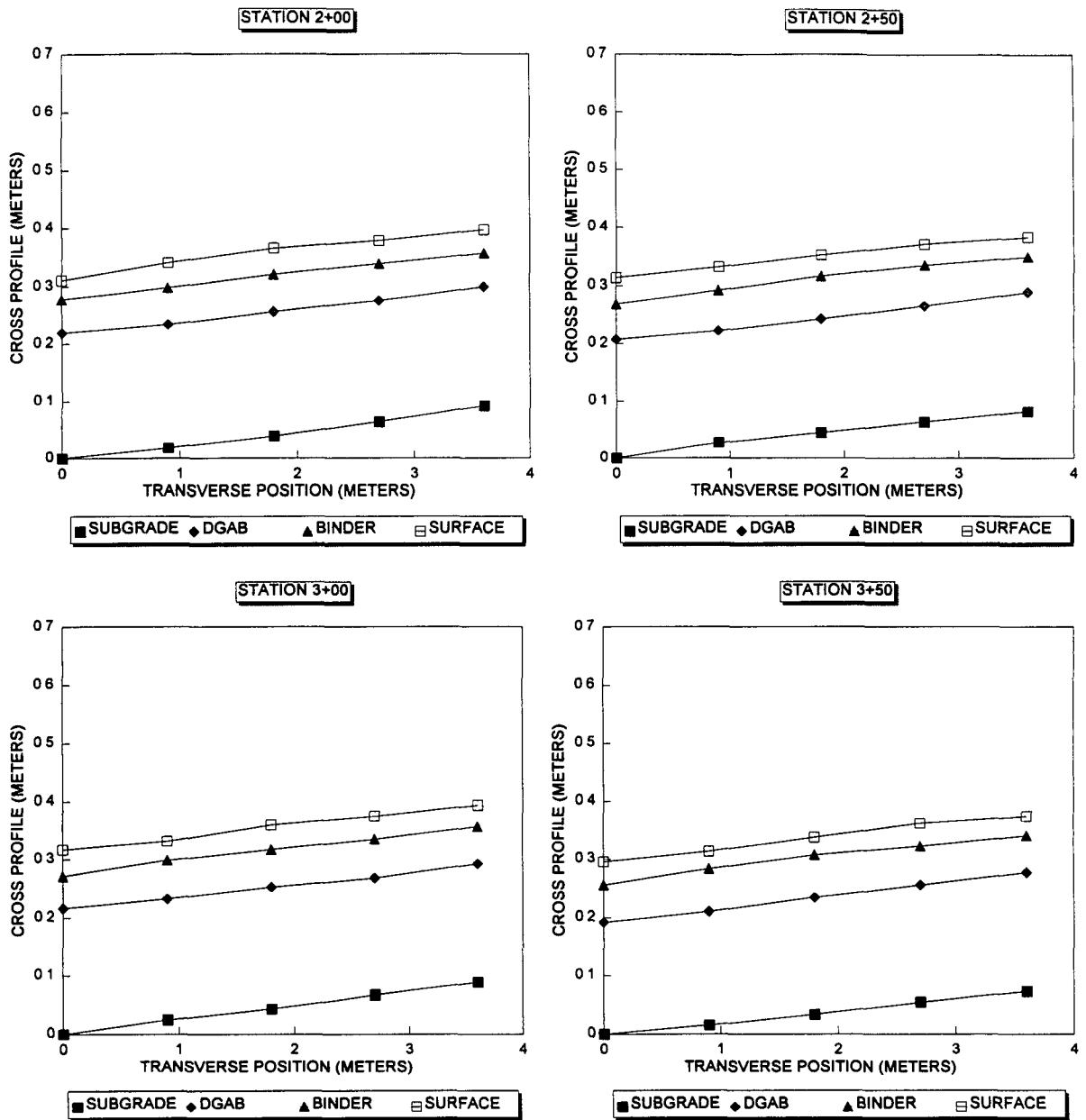
ARKANSAS

Trans. Offset	0.0M				0.84M				1.68M				2.52M				3.35M			
	DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)		DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)		DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)		DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)		DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	
B.2	0+00	0.213 8.4	0.061 2.4	0.034 1.32	0.219 8.64	0.061 2.4	0.034 1.32		0.216 8.52	0.067 2.64	0.037 1.44		0.216 8.52	0.067 2.64	0.030 1.2		0.219 8.64	0.064 2.52	0.027 1.08	
	0+50	0.210 8.28	0.049 1.92	0.037 1.44	0.223 8.76	0.055 2.16	0.034 1.32		0.210 8.28	0.070 2.76	0.030 1.2		0.219 8.64	0.067 2.64	0.037 1.44		0.226 8.88	0.061 2.4	0.037 1.44	
	1+00	0.213 8.4	0.052 2.04	0.043 1.68	0.204 8.04	0.070 2.76	0.034 1.32		0.201 7.92	0.073 2.88	0.037 1.44		0.204 8.04	0.070 2.76	0.037 1.44		0.213 8.4	0.064 2.52	0.037 1.44	
	1+50	0.198 7.8	0.058 2.28	0.043 1.68	0.207 8.16	0.061 2.4	0.037 1.44		0.201 7.92	0.073 2.88	0.034 1.32		0.201 7.92	0.073 2.88	0.034 1.32		0.204 8.04	0.067 2.64	0.037 1.44	
	2+00	0.219 8.64	0.058 2.28	0.034 1.32	0.216 8.52	0.064 2.52	0.043 1.68		0.216 8.52	0.064 2.52	0.046 1.8		0.210 8.28	0.064 2.52	0.040 1.56		0.207 8.16	0.058 2.28	0.040 1.56	
	2+50	0.207 8.16	0.061 2.4	0.046 1.8	0.195 7.68	0.070 2.76	0.040 1.56		0.198 7.8	0.073 2.88	0.037 1.44		0.201 7.92	0.070 2.76	0.037 1.44		0.207 8.16	0.061 2.4	0.034 1.32	
	3+00	0.216 8.52	0.055 2.16	0.046 1.8	0.207 8.16	0.067 2.64	0.034 1.32		0.210 8.28	0.064 2.52	0.043 1.68		0.201 7.92	0.067 2.64	0.040 1.56		0.204 8.04	0.064 2.52	0.037 1.44	
	3+50	0.192 7.56	0.064 2.52	0.040 1.56	0.195 7.68	0.073 2.88	0.030 1.2		0.201 7.92	0.073 2.88	0.030 1.2		0.201 7.92	0.067 2.64	0.040 1.56		0.204 8.04	0.064 2.52	0.034 1.32	
	4+00	0.201 7.92	0.052 2.04	0.040 1.56	0.201 7.92	0.064 2.52	0.030 1.2		0.204 8.04	0.064 2.52	0.034 1.32		0.213 8.4	0.064 2.52	0.034 1.32		0.216 8.52	0.061 2.4	0.037 1.44	
	4+50	0.198 7.8	0.067 2.64	0.034 1.32	0.204 8.04	0.067 2.64	0.030 1.2		0.213 8.4	0.070 2.76	0.037 1.44		0.226 8.88	0.061 2.4	0.040 1.56		0.213 8.4	0.061 2.4	0.034 1.32	
	5+00	0.189 7.44	0.073 2.88	0.037 1.44	0.204 8.04	0.061 2.4	0.034 1.32		0.207 8.16	0.064 2.52	0.037 1.44		0.210 8.28	0.061 2.4	0.040 1.56		0.207 8.16	0.061 2.4	0.037 1.44	
AVG	0.205 8.084	0.059 2.324	0.039 1.538	0.207 8.149	0.065 2.553	0.034 1.353		0.207 8.160	0.069 2.705	0.036 1.429		0.209 8.247	0.067 2.618	0.037 1.451		0.211 8.313	0.062 2.455	0.035 1.385		
MIN	0.189 7.440	0.049 1.920	0.034 1.320	0.195 7.680	0.055 2.160	0.030 1.200		0.198 7.800	0.064 2.520	0.030 1.200		0.201 7.920	0.061 2.400	0.030 1.200		0.211 8.040	0.058 2.280	0.027 1.080		
MAX	0.219 8.640	0.073 2.880	0.046 1.800	0.223 8.760	0.073 2.880	0.043 1.680		0.216 8.520	0.073 2.880	0.046 1.800		0.226 8.880	0.073 2.880	0.040 1.560		0.216 8.880	0.067 2.640	0.040 1.560		
STD DEV	0.010 0.384	0.007 0.272	0.004 0.176	0.009 0.341	0.005 0.199	0.004 0.146		0.006 0.245	0.004 0.157	0.004 0.173		0.008 0.320	0.004 0.143	0.003 0.120		0.007 0.266	0.002 0.094	0.003 0.119		

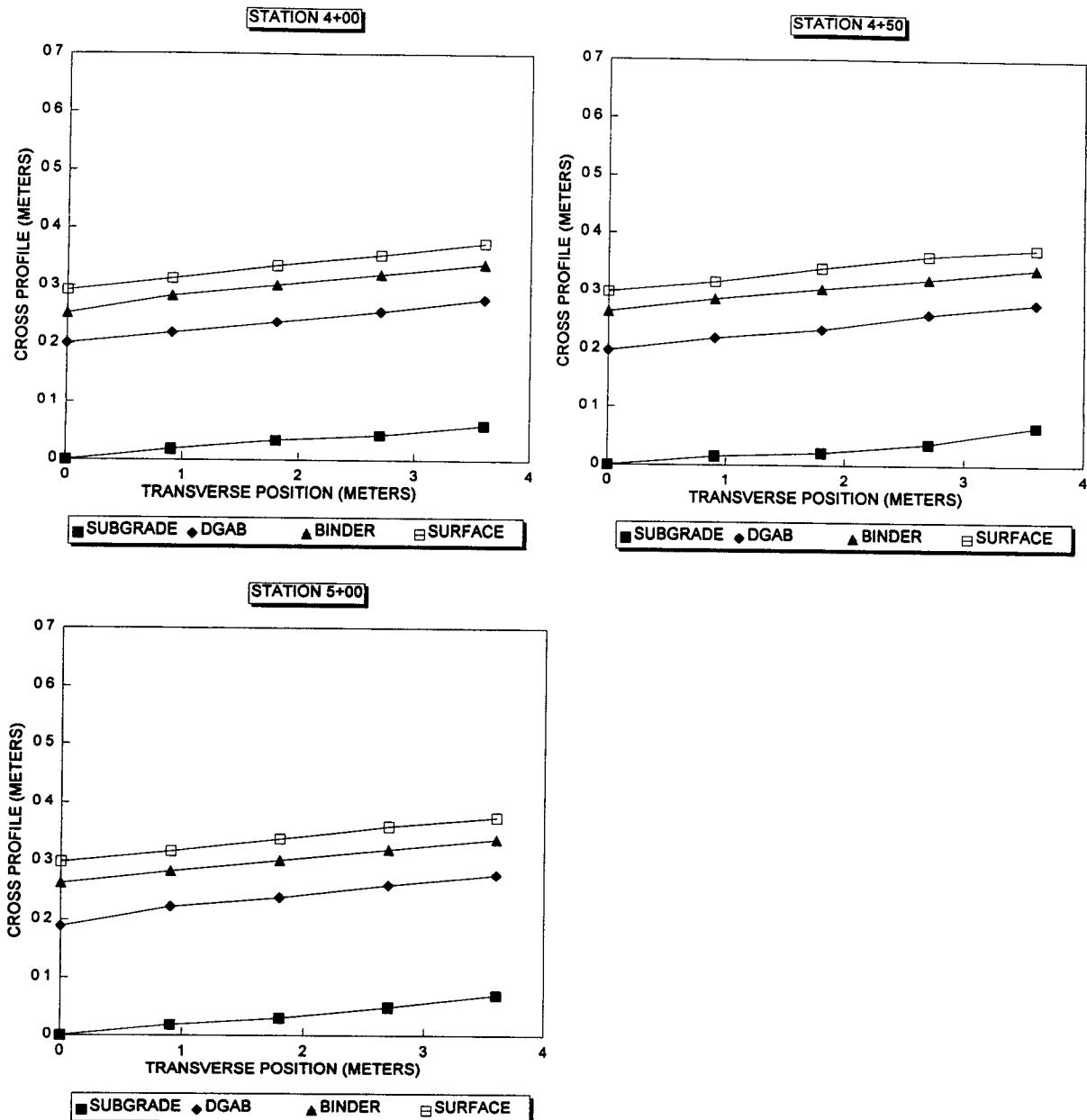
SECTION 050113



SECTION 050113



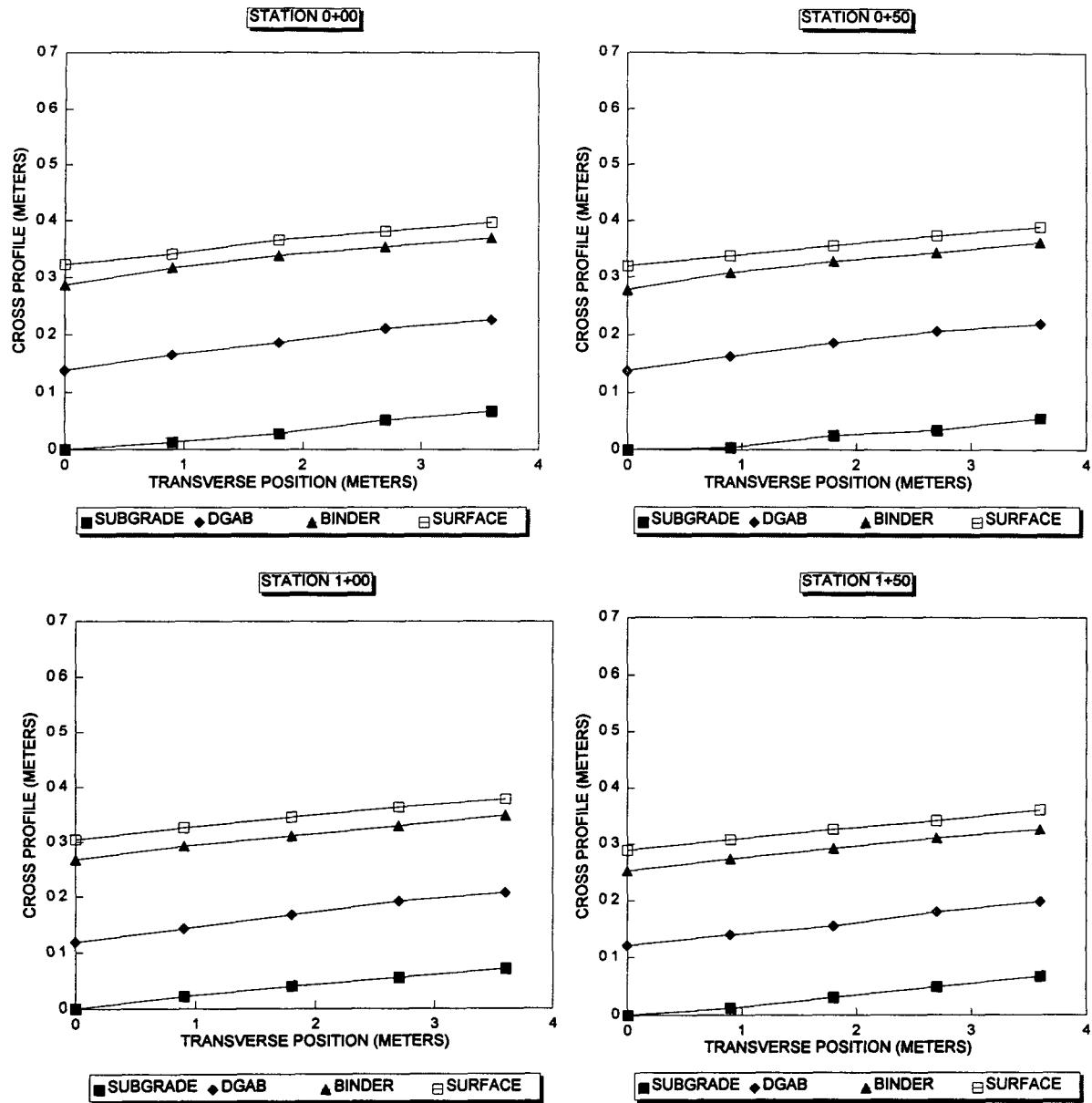
SECTION 050113



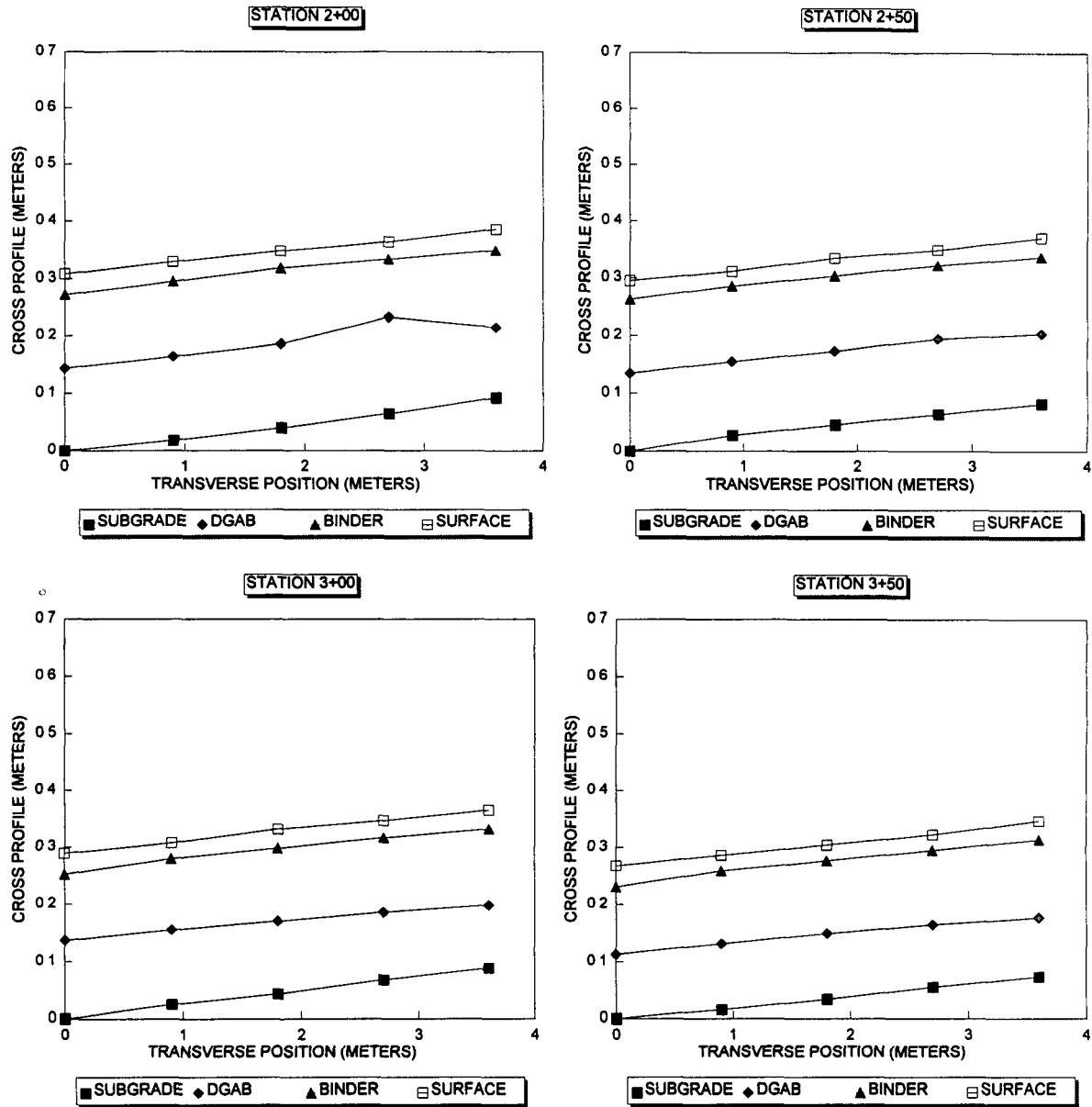
SECTION 050114

ARKANSAS																
Trans. Offset	0.0M			0.84M			1.68M			2.52M			3.35M			
	DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	
B.6	0+00	0 137 5 4	0 149 5 88	0 037 1 44	0 152 6	0 152 6	0 024 0 96	0 158 6 24	0 152 6	0 027 1 08	0 158 6 24	0 143 5 64	0 027 1 08	0 158 6 24	0 143 5 64	0 027 1 08
	0+50	0 137 5 4	0 140 5 52	0 043 1 68	0 158 6 24	0 146 5 76	0 030 1 2	0 162 6 36	0 143 5 64	0 027 1 08	0 174 6 84	0 137 5 4	0 030 1 2	0 165 6 48	0 143 5 64	0 027 1 08
	1+00	0 119 4 68	0 149 5 88	0 037 1 44	0 122 4 8	0 149 5 88	0 034 1 32	0 128 5 04	0 143 5 64	0 034 1 32	0 137 5 4	0 137 5 4	0 034 1 32	0 137 5 4	0 140 5 52	0 030 1 2
	1+50	0 122 4 8	0 131 5 16	0 037 1 44	0 128 5 04	0 134 5 28	0 034 1 32	0 125 4 92	0 137 5 4	0 034 1 32	0 131 5 16	0 131 5 16	0 030 1 2	0 131 5 16	0 128 5 04	0 034 1 32
	2+00	0 143 5 64	0 128 5 04	0 037 1 44	0 146 5 76	0 131 5 16	0 034 1 32	0 146 5 76	0 131 5 16	0 030 1 2	0 168 6 6	0 101 3 96	0 030 1 2	0 122 4 8	0 134 5 28	0 037 1 44
	2+50	0 134 5 28	0 128 5 04	0 034 1 32	0 128 5 04	0 131 5 16	0 024 0 96	0 128 5 04	0 131 5 16	0 030 1 2	0 131 5 16	0 128 5 04	0 027 1 08	0 122 4 8	0 134 5 28	0 034 1 32
	3+00	0 137 5 4	0 116 4 56	0 037 1 44	0 131 5 16	0 125 4 92	0 027 1 08	0 128 5 04	0 128 5 04	0 034 1 32	0 119 4 68	0 131 5 16	0 030 1 2	0 110 4 32	0 134 5 28	0 034 1 32
	3+50	0 113 4 44	0 119 4 68	0 037 1 44	0 116 4 56	0 126 5 04	0 027 1 08	0 116 4 56	0 128 5 04	0 027 1 08	0 110 4 32	0 131 5 16	0 027 1 08	0 104 4 08	0 137 5 4	0 034 1 32
	4+00	0 119 4 68	0 119 4 68	0 040 1 56	0 119 4 68	0 128 5 04	0 034 1 32	0 122 4 8	0 131 5 16	0 030 1 2	0 128 5 04	0 134 5 28	0 027 1 08	0 125 4 92	0 131 5 16	0 040 1 56
	4+50	0 125 4 92	0 122 4 8	0 037 1 44	0 128 5 04	0 128 5 04	0 034 1 32	0 140 5 52	0 128 5 04	0 034 1 32	0 137 5 4	0 137 5 4	0 027 1 08	0 125 4 92	0 134 5 28	0 034 1 32
	5+00	0 116 4 56	0 119 4 68	0 040 1 56	0 113 4 44	0 128 5 04	0 030 1 2	0 119 4 68	0 128 5 04	0 034 1 32	0 119 4 68	0 131 5 16	0 034 1 32	0 113 4 44	0 134 5 28	0 030 1 2
AVG	0 127 5 018	0 129 5 084	0 037 1 473	0 131 5 160	0 135 5 302	0 030 1 189	0 134 5 269	0 135 5 302	0 031 1 222	0 137 5 411	0 131 5 160	0 030 1 167	0 128 5 051	0 136 5 345	0 033 1 287	
MIN	0 113 4 440	0 116 4 560	0 034 1 320	0 113 4 440	0 125 4 920	0 024 0 960	0 116 4 560	0 128 5 040	0 027 1 080	0 110 4 320	0 101 3 960	0 027 1 080	0 125 4 080	0 131 5 040	0 027 1 080	
MAX	0 143 5 640	0 149 5 880	0 043 1 680	0 158 6 240	0 152 6 000	0 034 1 320	0 162 6 360	0 152 6 000	0 034 1 320	0 174 6 840	0 143 5 640	0 034 1 320	0 165 6 480	0 143 5 640	0 040 1 560	
STD DEV	0 010 0 396	0 012 0 458	0 002 0 090	0 014 0 565	0 009 0 368	0 004 0 140	0 015 0 587	0 008 0 310	0 003 0 100	0 020 0 778	0 010 0 413	0 002 0 090	0 018 0 714	0 005 0 180	0 003 0 136	

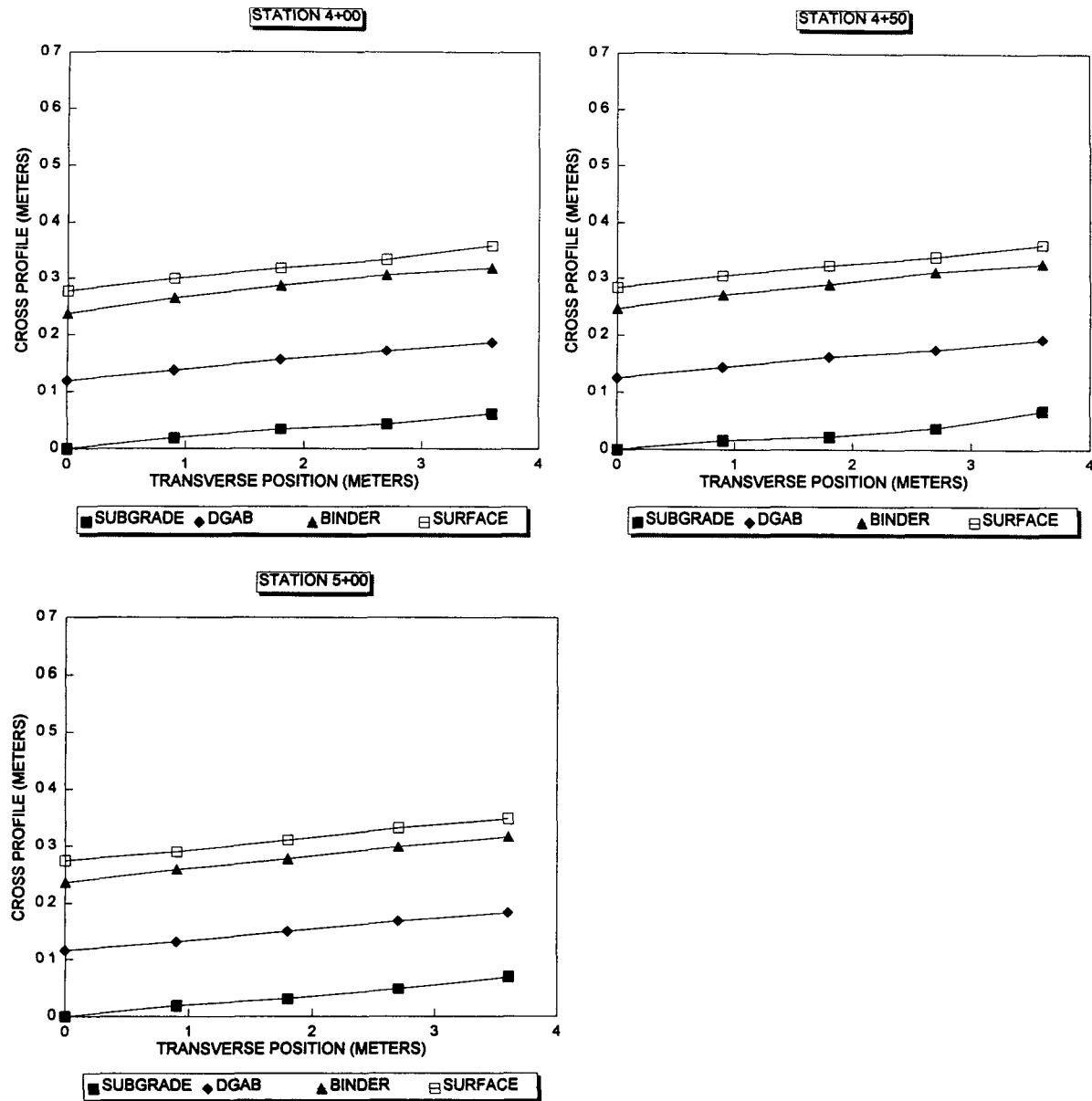
SECTION 050114



SECTION 050114



SECTION 050114

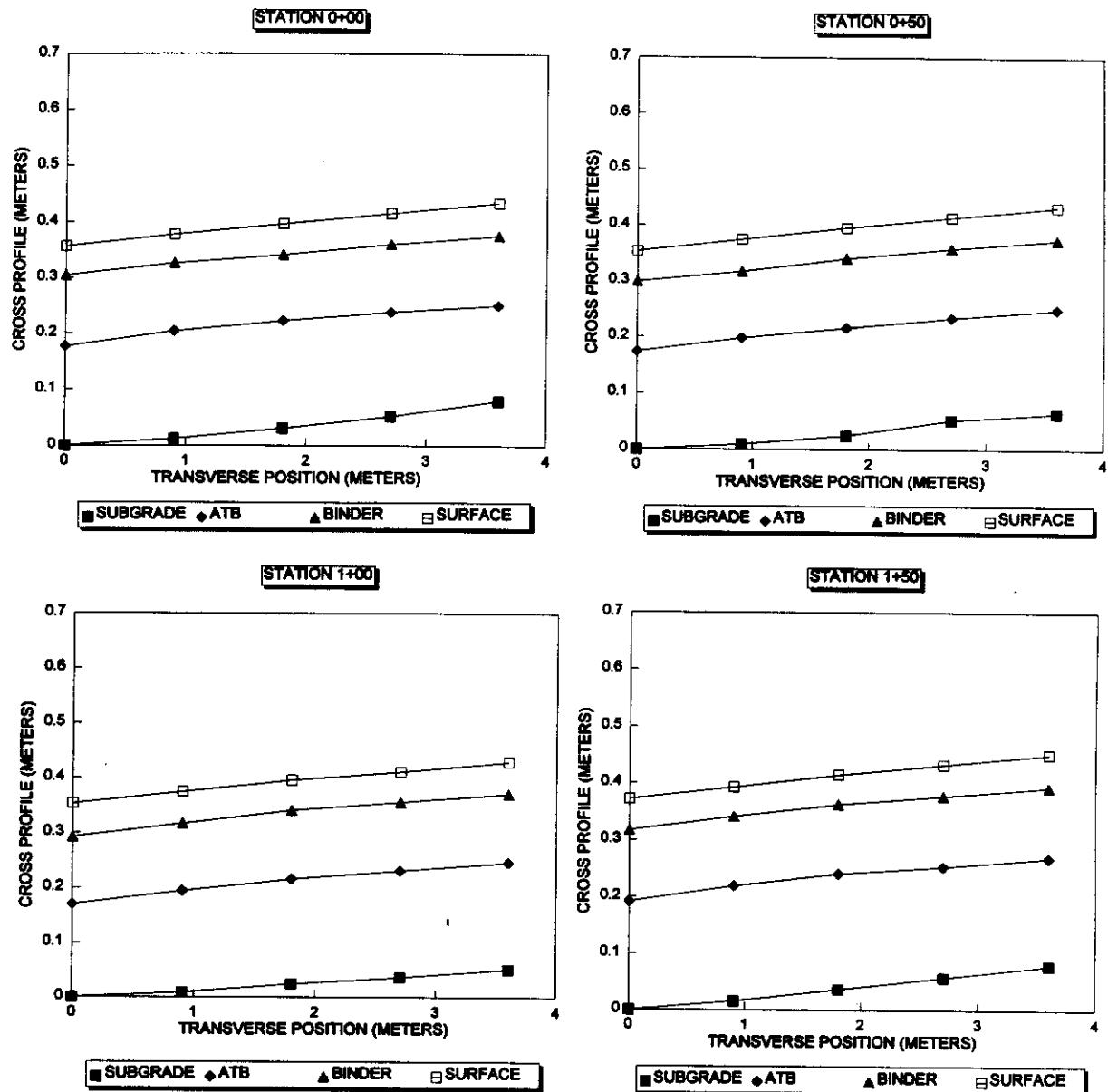


SECTION 050115

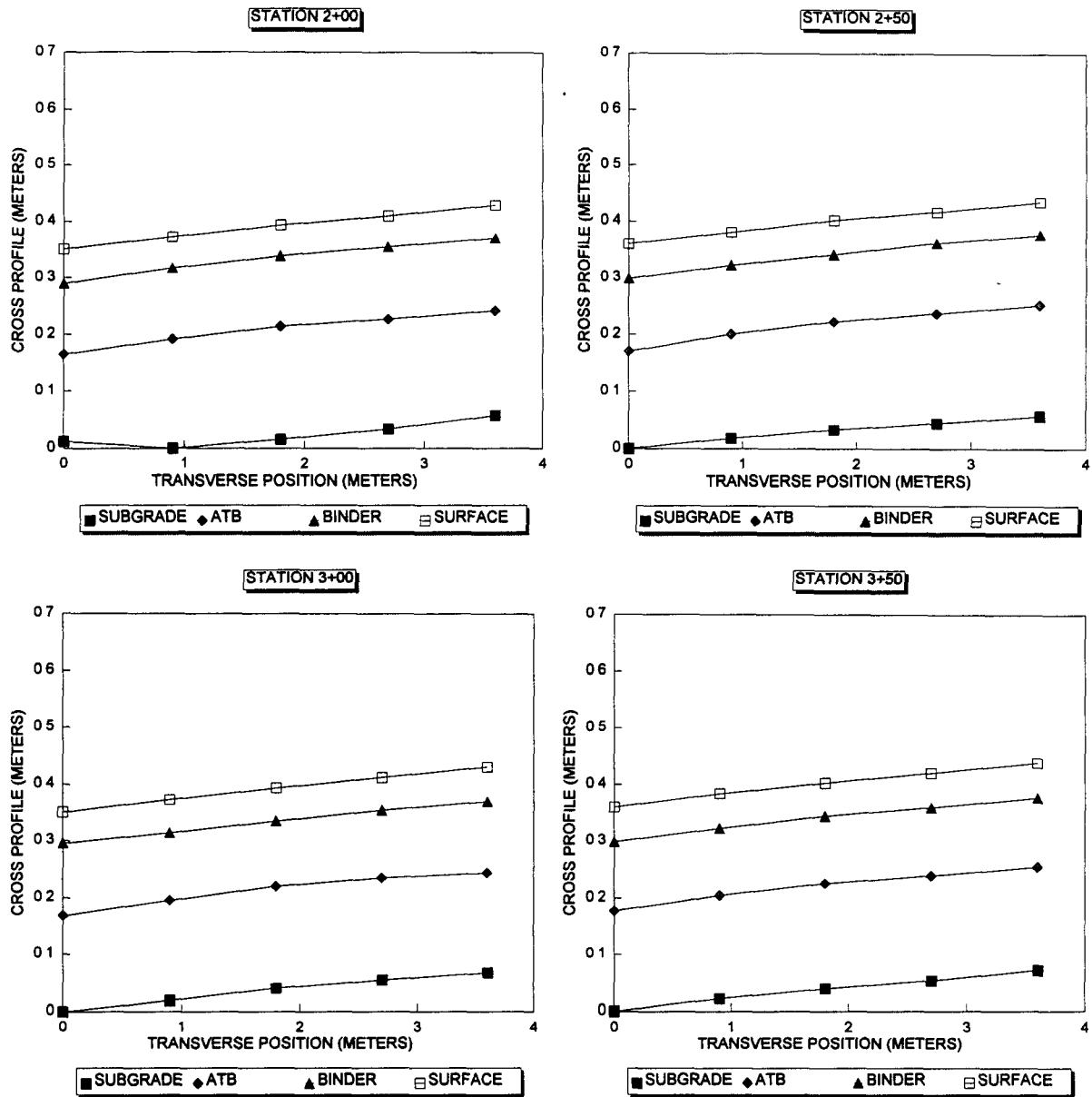
ARKANSAS

Trans. Offset	0 0M			0 84M			1.68M			2 52M			3 35M		
	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)
0+00	0 177 6 96	0 128 5 04	0 052 2 04	0 192 7 56	0 122 4 8	0 052 2 04	0 192 7 56	0 119 4 68	0 055 2 16	0 186 7 32	0 122 4 8	0 055 2 16	0 171 6 72	0 125 4 92	0 058 2 28
0+50	0 174 6 84	0 125 4 92	0 055 2 16	0 189 7 44	0 119 4 68	0 058 2 28	0 192 7 56	0 125 4 92	0 055 2 16	0 183 7 2	0 125 4 92	0 055 2 16	0 186 7 32	0 125 4 92	0 058 2 28
1+00	0 171 6 72	0 122 4 8	0 061 2 4	0 186 7 32	0 122 4 8	0 058 2 28	0 192 7 56	0 125 4 92	0 055 2 16	0 195 7 68	0 125 4 92	0 055 2 16	0 195 7 68	0 125 4 92	0 058 2 28
1+50	0 192 7 56	0 125 4 92	0 055 2 16	0 204 8 04	0 122 4 8	0 052 2 04	0 204 8 04	0 122 4 8	0 052 2 04	0 195 7 68	0 125 4 92	0 055 2 16	0 189 7 44	0 125 4 92	0 058 2 28
2+00	0 152 6	0 125 4 92	0 061 2 4	0 192 7 56	0 125 4 92	0 055 2 16	0 198 7 8	0 125 4 92	0 055 2 16	0 192 7 56	0 128 5 04	0 055 2 16	0 183 7 2	0 128 5 04	0 058 2 28
2+50	0 171 6 72	0 128 5 04	0 061 2 4	0 183 7 2	0 122 4 8	0 058 2 28	0 189 7 44	0 119 4 68	0 061 2 4	0 192 7 56	0 125 4 92	0 055 2 16	0 195 7 68	0 125 4 92	0 058 2 28
3+00	0 168 6 6	0 128 5 04	0 055 2 16	0 177 6 96	0 119 4 68	0 058 2 28	0 180 7 08	0 116 4 56	0 058 2 28	0 180 7 08	0 119 4 68	0 058 2 28	0 177 6 96	0 125 4 92	0 061 2 4
3+50	0 177 6 96	0 122 4 8	0 061 2 4	0 183 7 2	0 119 4 68	0 061 2 4	0 186 7 32	0 119 4 68	0 058 2 28	0 186 7 32	0 119 4 68	0 061 2 4	0 183 7 2	0 122 4 8	0 061 2 4
4+00	0 174 6 84	0 122 4 8	0 064 2 52	0 189 7 44	0 119 4 68	0 061 2 4	0 192 7 56	0 119 4 68	0 058 2 28	0 189 7 44	0 119 4 68	0 061 2 4	0 189 7 44	0 122 4 8	0 061 2 4
4+50	0 155 6 12	0 125 4 92	0 055 2 16	0 168 6 6	0 122 4 8	0 055 2 16	0 174 6 84	0 122 4 8	0 055 2 16	0 183 7 2	0 125 4 92	0 052 2 04	0 183 7 2	0 122 4 8	0 058 2 28
5+00	0 180 7 08	0 119 4 68	0 061 2 4	0 180 7 08	0 122 4 8	0 061 2 4	0 186 7 32	0 122 4 8	0 061 2 4	0 189 7 44	0 122 4 8	0 058 2 28	0 186 7 32	0 122 4 8	0 061 2 4
AVG	0 172 6 764	0 124 4 898	0 058 2 291	0 186 7 309	0 121 4 767	0 057 2 247	0 190 7 462	0 121 4 767	0 057 2 225	0 188 7 407	0 123 4 844	0 056 2 215	0 185 7 287	0 124 4 887	0 059 2 324
MIN	0 152 0 119	0 119 0 052	0 052 0 168	0 119 0 119	0 052 0 052	0 052 0 052	0 174 0 174	0 116 0 116	0 052 0 052	0 180 0 180	0 119 0 119	0 052 0 052	0 171 0 171	0 122 0 122	0 058 0 058
MAX	0 192 7 560	0 128 5 040	0 064 2 520	0 204 8 040	0 125 4 920	0 061 2 400	0 204 8 040	0 125 4 920	0 061 2 400	0 195 7 680	0 128 5 040	0 061 2 400	0 195 7 680	0 128 5 040	0 061 2 400
STD DEV	0 010 0 410	0 003 0 112	0 004 0 149	0 009 0 356	0 002 0 074	0 003 0 126	0 008 0 310	0 003 0 115	0 003 0 107	0 005 0 192	0 003 0 117	0 003 0 107	0 007 0 271	0 002 0 074	0 001 0 058

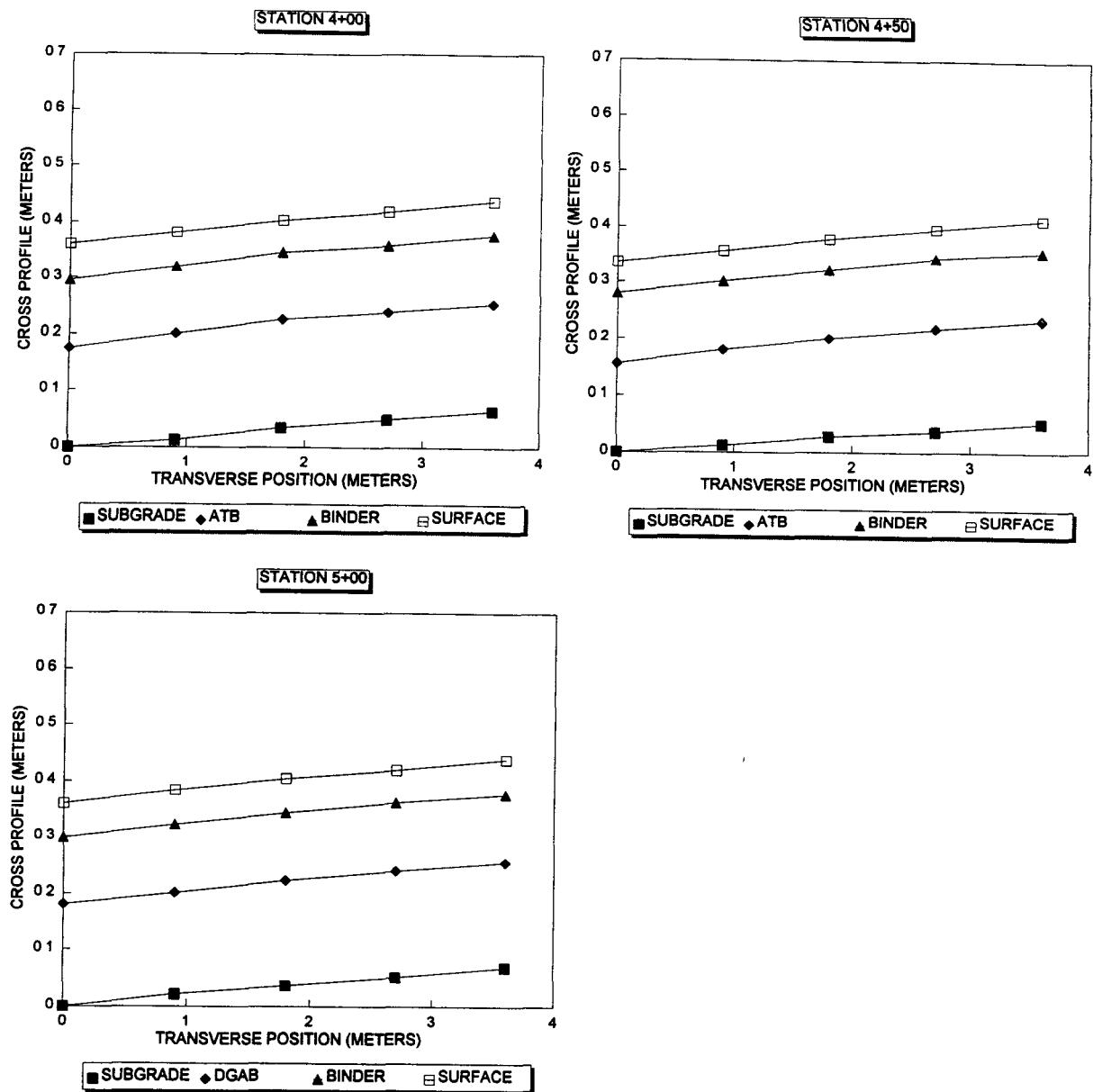
SECTION 050115



SECTION 050115



SECTION 050115

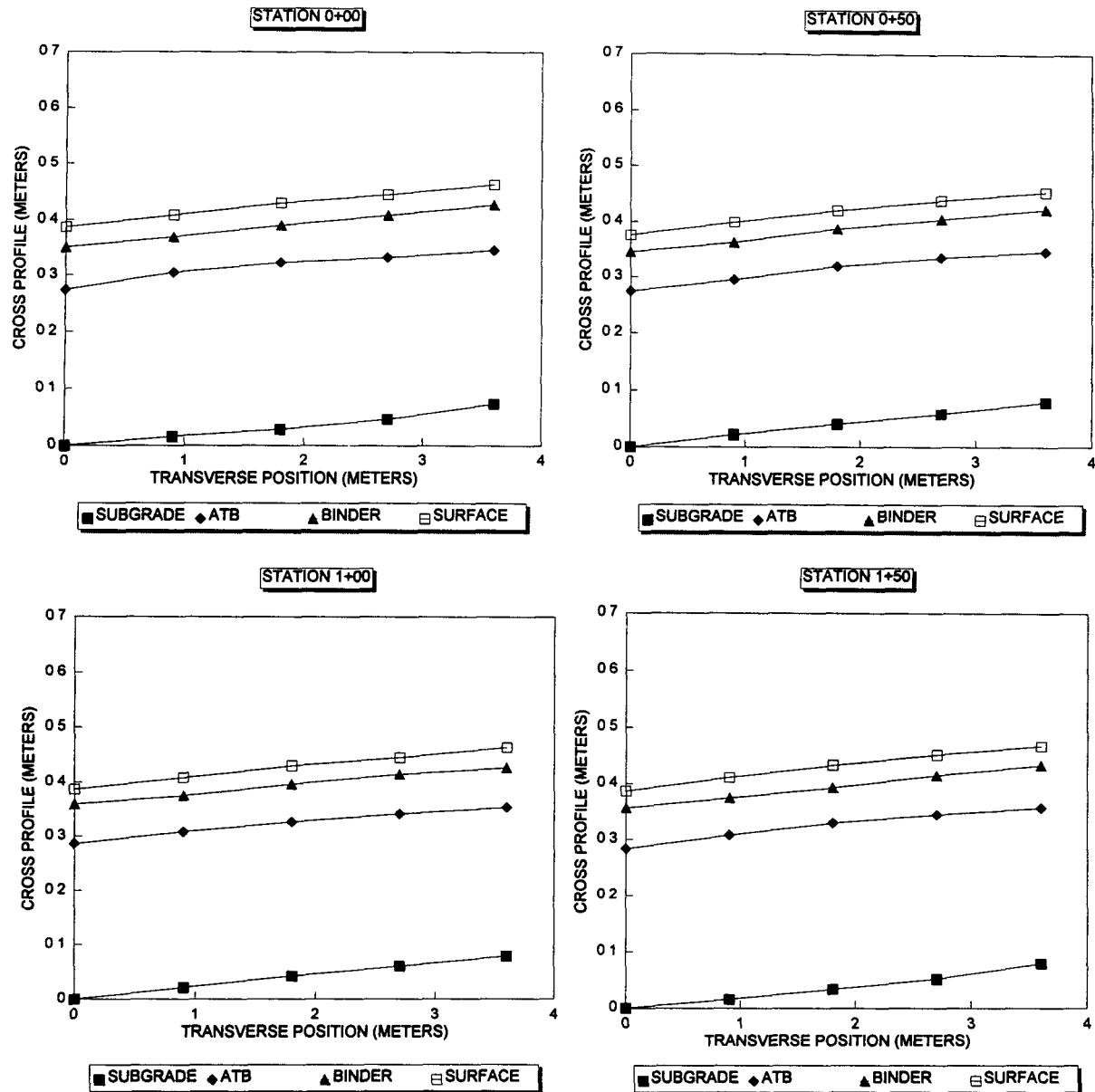


SECTION 050116

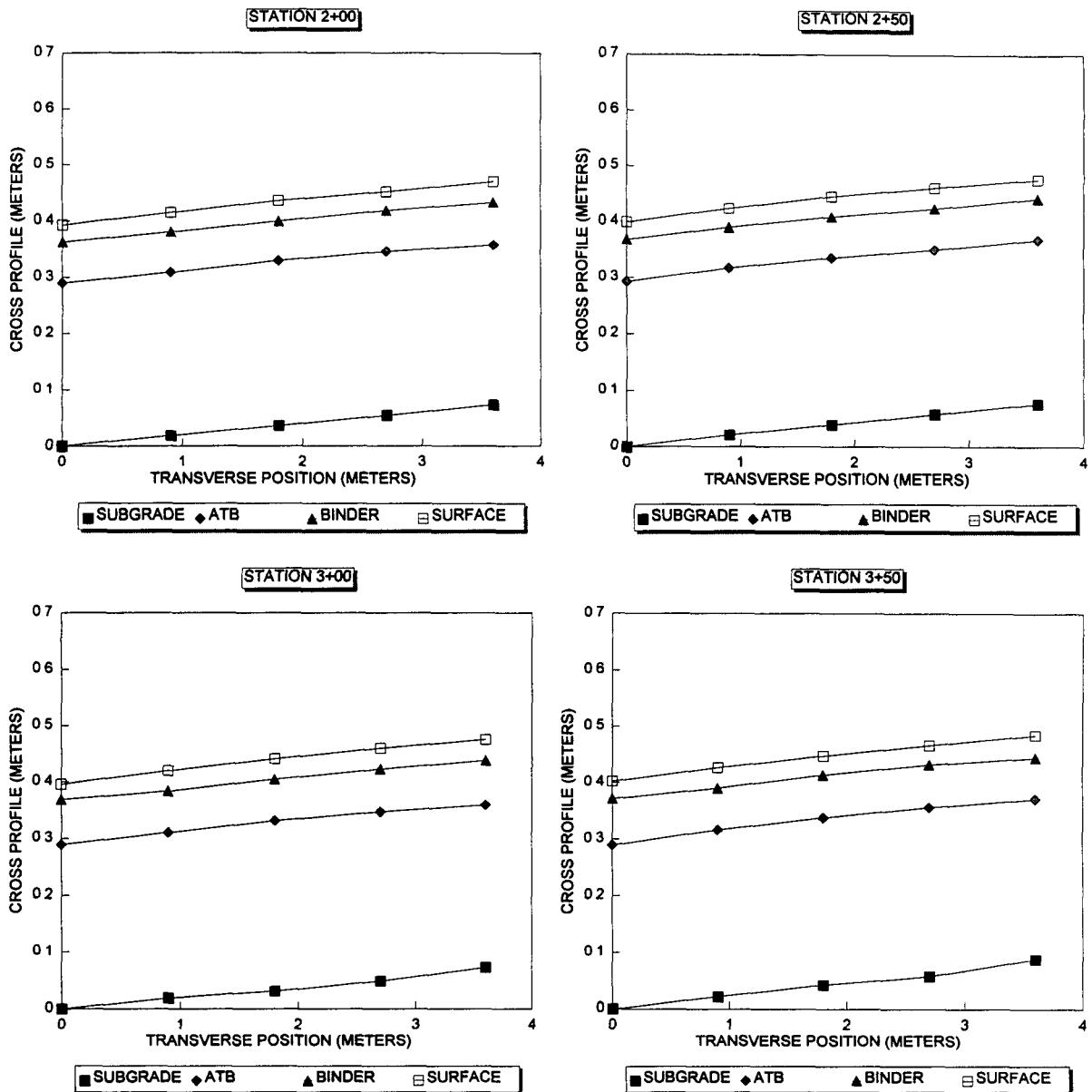
ARKANSAS

Trans. Offset	0.0M			0.64M			1.68M			2.52M			3.35M			
	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	
B.14	0+00	0.274 10.8	0.076 3	0.037 1.44	0.290 11.4	0.064 2.52	0.040 1.56	0.296 11.64	0.067 2.64	0.040 1.56	0.287 11.28	0.076 3	0.037 1.44	0.271 10.68	0.082 3.24	0.037 1.44
	0+50	0.274 10.8	0.070 2.76	0.030 1.2	0.274 10.8	0.067 2.64	0.037 1.44	0.280 11.04	0.067 2.64	0.034 1.32	0.277 10.92	0.070 2.76	0.034 1.32	0.268 10.56	0.076 3	0.030 1.2
	1+00	0.287 11.28	0.073 2.88	0.027 1.08	0.287 11.28	0.067 2.64	0.034 1.32	0.283 11.16	0.070 2.76	0.034 1.32	0.280 11.04	0.073 2.88	0.030 1.2	0.274 10.8	0.073 2.88	0.037 1.44
	1+50	0.283 11.16	0.073 2.68	0.030 1.2	0.293 11.52	0.067 2.64	0.037 1.44	0.296 11.64	0.064 2.52	0.040 1.56	0.293 11.52	0.070 2.76	0.037 1.44	0.277 10.92	0.076 3	0.034 1.32
	2+00	0.290 11.4	0.073 2.88	0.030 1.2	0.290 11.4	0.073 2.88	0.034 1.32	0.293 11.52	0.070 2.76	0.037 1.44	0.290 11.4	0.073 2.88	0.034 1.32	0.283 11.16	0.076 3	0.037 1.44
	2+50	0.293 11.52	0.076 3	0.030 1.2	0.296 11.64	0.073 2.88	0.034 1.32	0.296 11.64	0.073 2.88	0.037 1.44	0.293 11.52	0.073 2.88	0.037 1.44	0.293 11.52	0.073 2.88	0.034 1.32
	3+00	0.290 11.4	0.079 3.12	0.027 1.08	0.293 11.52	0.073 2.88	0.037 1.44	0.302 11.88	0.073 2.88	0.037 1.44	0.299 11.76	0.076 3	0.037 1.44	0.287 11.28	0.079 3.12	0.037 1.44
	3+50	0.290 11.4	0.082 3.24	0.030 1.2	0.296 11.64	0.073 2.88	0.037 1.44	0.296 11.64	0.076 3	0.034 1.32	0.299 11.76	0.076 3	0.034 1.32	0.283 11.16	0.073 2.88	0.040 1.56
	4+00	0.287 11.28	0.079 3.12	0.040 1.56	0.299 11.76	0.067 2.64	0.046 1.8	0.299 11.76	0.070 2.76	0.040 1.56	0.296 11.64	0.076 3	0.037 1.44	0.293 11.52	0.076 3	0.037 1.44
	4+50	0.290 11.4	0.088 3.48	0.024 0.96	0.299 11.76	0.073 2.88	0.034 1.32	0.302 11.88	0.067 2.64	0.037 1.44	0.299 11.76	0.073 2.88	0.034 1.32	0.290 11.4	0.079 3.12	0.034 1.32
	5+00	0.296 11.64	0.082 3.24	0.034 1.32	0.299 11.76	0.070 2.76	0.040 1.56	0.302 11.88	0.070 2.76	0.040 1.56	0.299 11.76	0.076 3	0.037 1.44	0.293 11.52	0.079 3.12	0.037 1.44
AVG	0.287 11.280	0.078 3.055	0.031 1.222	0.292 11.498	0.070 2.749	0.037 1.451	0.295 11.607	0.070 2.749	0.037 1.451	0.292 11.487	0.074 2.913	0.035 1.375	0.283 11.138	0.077 3.022	0.035 1.396	
MIN	0.274 10.800	0.070 2.760	0.024 0.960	0.274 10.800	0.064 2.520	0.034 1.320	0.280 11.040	0.064 2.520	0.034 1.320	0.277 10.920	0.070 2.760	0.030 1.200	0.268 10.560	0.073 2.680	0.030 1.200	
MAX	0.296 11.640	0.088 3.480	0.040 1.560	0.299 11.760	0.073 2.880	0.046 1.800	0.302 11.880	0.076 3.000	0.040 1.560	0.299 11.760	0.076 3.000	0.037 1.440	0.293 11.520	0.082 3.240	0.040 1.560	
STD DEV	0.006 0.256	0.005 0.201	0.004 0.160	0.007 0.270	0.003 0.130	0.004 0.140	0.007 0.266	0.003 0.130	0.002 0.095	0.007 0.285	0.002 0.090	0.009 0.079	0.009 0.335	0.003 0.112	0.002 0.093	

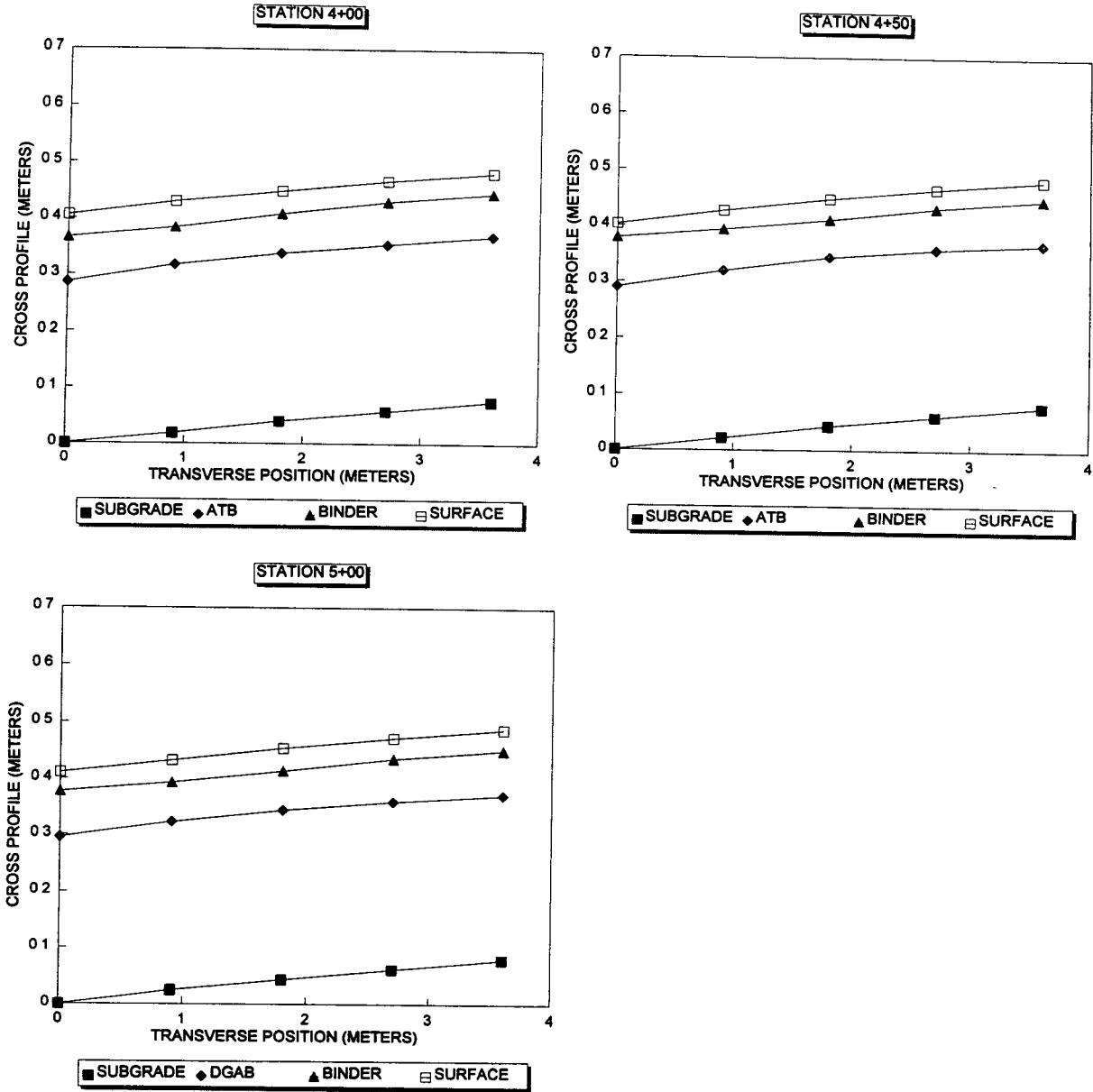
SECTION 050116



SECTION 050116

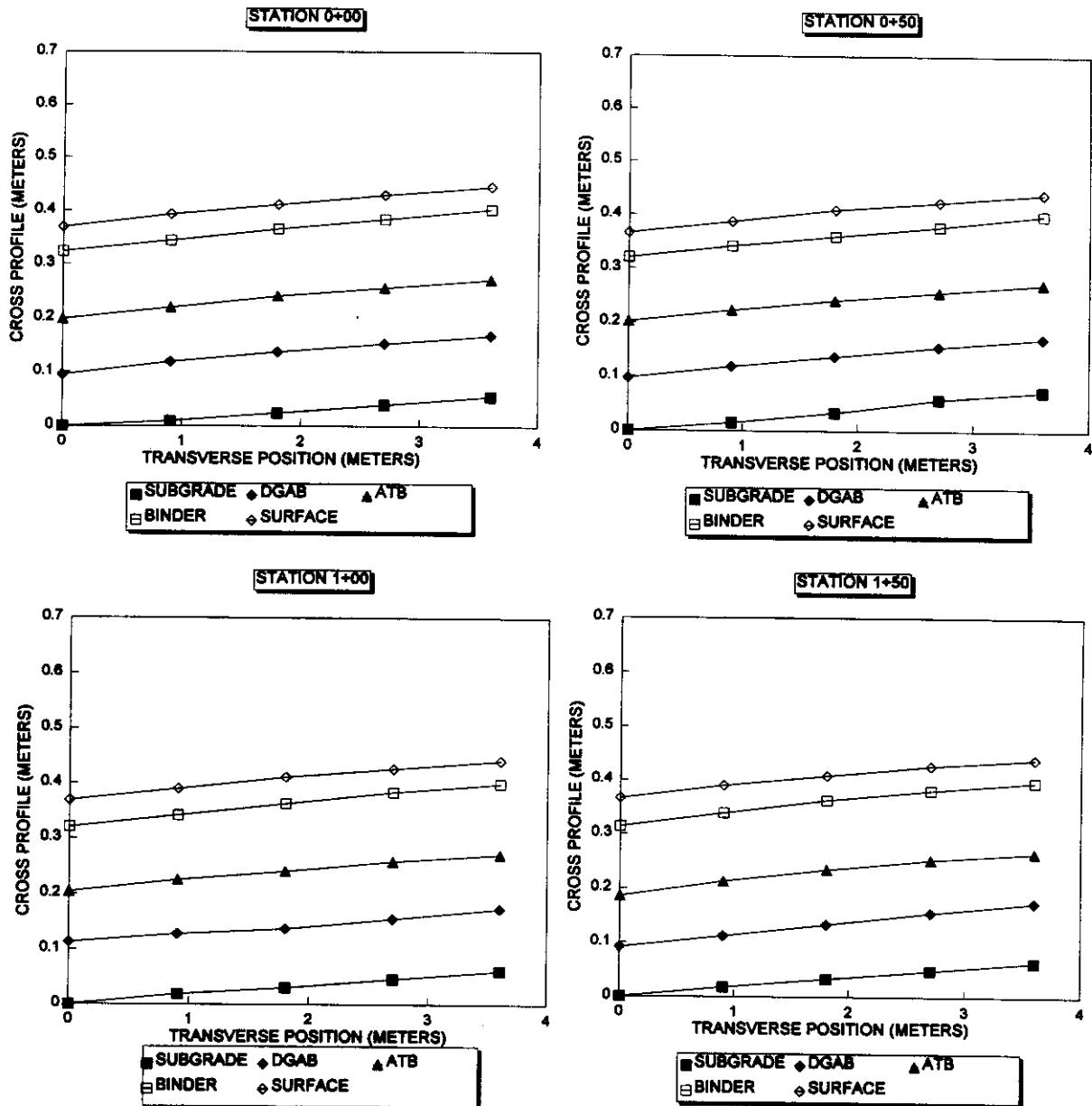


SECTION 050116

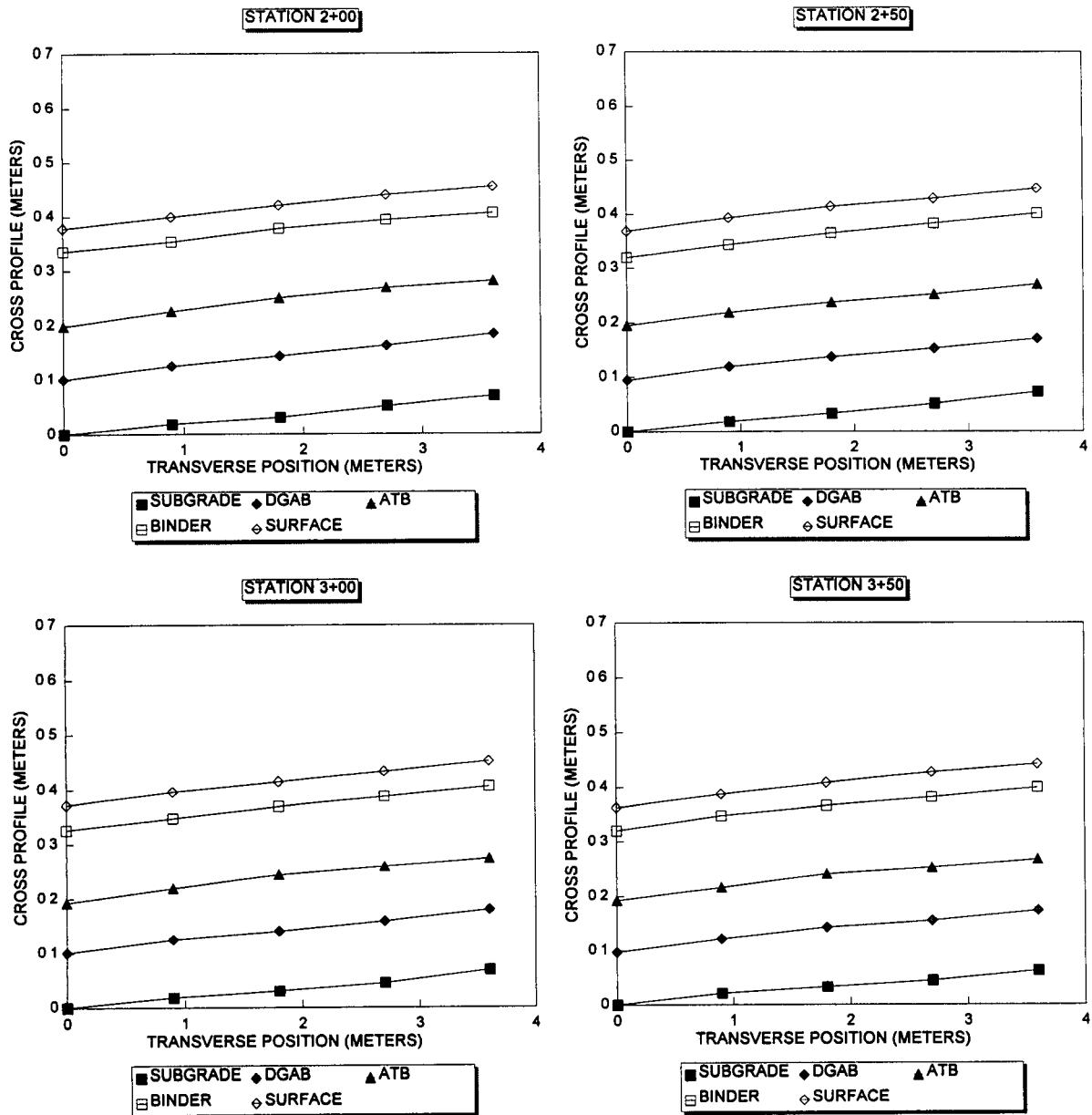


Trans Offset	ARKANSAS								ARKANSAS								ARKANSAS							
	0.0M				0.84M				1.68M				2.52M				3.35M							
	DGAB Thickness (in)	ATB Thickness (in)	Binder Thickness (in)	Surface Thickness (in)	DGAB Thickness (in)	ATB Thickness (in)	Binder Thickness (in)	Surface Thickness (in)	DGAB Thickness (in)	ATB Thickness (in)	Binder Thickness (in)	Surface Thickness (in)	DGAB Thickness (in)	ATB Thickness (in)	Binder Thickness (in)	Surface Thickness (in)	DGAB Thickness (in)	ATB Thickness (in)	Binder Thickness (in)	Surface Thickness (in)				
0+00	0.094 3.72	0.104 4.08	0.125 4.92	0.046 1.8	0.110 4.32	0.101 3.96	0.125 4.92	0.049 1.82	0.113 4.44	0.104 4.08	0.125 4.92	0.046 1.8	0.113 4.44	0.104 4.08	0.128 5.04	0.046 1.8	0.113 4.44	0.104 4.08	0.131 5.16	0.043 1.68				
0+50	0.098 3.84	0.104 4.08	0.119 4.68	0.046 1.8	0.104 4.08	0.104 4.08	0.119 4.68	0.046 1.8	0.104 4.08	0.104 4.08	0.119 4.68	0.046 1.82	0.098 3.84	0.101 3.96	0.122 4.8	0.046 1.8	0.098 3.84	0.101 3.96	0.128 5.04	0.040 1.56				
1+00	0.113 4.44	0.091 3.6	0.116 4.56	0.049 1.82	0.110 4.32	0.098 3.84	0.116 4.56	0.049 1.92	0.107 4.2	0.104 4.08	0.122 4.8	0.049 1.92	0.110 4.32	0.104 4.08	0.125 4.92	0.043 1.68	0.113 4.44	0.098 3.84	0.128 5.04	0.043 1.68				
1+50	0.091 3.6	0.094 3.72	0.128 5.04	0.052 2.04	0.094 3.72	0.101 3.96	0.125 4.92	0.052 2.04	0.101 3.96	0.101 3.96	0.128 5.04	0.046 1.8	0.107 4.2	0.098 3.84	0.128 5.04	0.046 1.8	0.110 4.32	0.091 3.6	0.131 5.16	0.043 1.68				
2+00	0.101 3.96	0.098 3.84	0.137 5.4	0.043 1.68	0.107 4.2	0.101 3.96	0.128 5.04	0.046 1.8	0.113 4.44	0.107 4.2	0.128 5.04	0.043 1.68	0.110 4.32	0.107 4.2	0.125 4.92	0.046 1.8	0.113 4.44	0.098 3.84	0.125 4.92	0.049 1.92				
2+50	0.094 3.72	0.101 3.96	0.125 4.92	0.049 1.92	0.101 3.96	0.101 3.96	0.125 4.92	0.049 1.92	0.104 4.08	0.101 3.96	0.128 5.04	0.049 1.92	0.101 3.96	0.101 3.96	0.131 5.16	0.046 1.8	0.098 3.84	0.101 3.96	0.131 5.16	0.046 1.8				
3+00	0.101 3.96	0.091 3.6	0.134 5.28	0.046 1.8	0.107 4.2	0.094 3.72	0.128 5.04	0.049 1.92	0.110 4.32	0.104 4.08	0.125 4.92	0.046 1.8	0.113 4.44	0.101 3.96	0.128 5.04	0.046 1.8	0.110 4.32	0.094 3.72	0.131 5.16	0.046 1.8				
3+50	0.098 3.84	0.094 3.72	0.128 5.04	0.043 1.68	0.101 3.96	0.094 3.72	0.131 5.16	0.040 1.56	0.110 4.32	0.098 3.84	0.125 4.92	0.043 1.68	0.110 4.32	0.098 3.84	0.128 5.04	0.046 1.8	0.110 4.32	0.094 3.72	0.131 5.16	0.043 1.68				
4+00	0.098 3.84	0.085 3.36	0.134 5.28	0.043 1.68	0.098 3.84	0.091 3.6	0.131 5.16	0.043 1.68	0.094 3.72	0.094 3.72	0.134 5.28	0.043 1.68	0.098 3.84	0.091 3.6	0.137 5.4	0.040 1.56	0.098 3.84	0.088 3.48	0.140 5.52	0.040 1.56				
4+50	0.110 4.32	0.085 3.36	0.148 5.76	0.034 1.32	0.107 4.2	0.094 3.72	0.140 5.52	0.034 1.32	0.101 3.96	0.101 3.96	0.137 5.4	0.037 1.44	0.101 3.96	0.104 4.08	0.134 5.28	0.034 1.32	0.107 4.2	0.094 3.72	0.140 5.52	0.034 1.32				
5+00	0.107 4.2	0.098 3.84	0.116 4.56	0.037 1.44	0.101 3.96	0.085 3.36	0.131 5.16	0.037 1.44	0.094 3.72	0.094 3.72	0.128 5.04	0.040 1.56	0.088 3.48	0.098 3.84	0.131 5.16	0.040 1.56	0.088 3.48	0.094 3.72	0.137 5.4	0.040 1.56				
AVG	0.100 3.949	0.095 3.742	0.128 5.040	0.044 1.735	0.103 4.069	0.097 3.807	0.127 5.007	0.045 1.756	0.104 4.113	0.101 3.971	0.127 5.007	0.044 1.745	0.104 4.102	0.100 3.949	0.129 5.073	0.043 1.702	0.105 4.135	0.096 3.785	0.132 5.204	0.042 1.658				
MIN	0.081 3.600	0.085 3.380	0.115 4.560	0.034 1.320	0.094 3.720	0.085 3.380	0.116 4.560	0.034 1.320	0.094 3.720	0.094 3.720	0.119 4.680	0.037 1.440	0.088 3.480	0.091 3.600	0.122 4.800	0.034 1.320	0.088 3.480	0.088 3.480	0.125 4.920	0.034 1.320				
MAX	0.113 4.440	0.104 4.080	0.148 5.760	0.052 2.040	0.110 4.320	0.104 4.080	0.140 5.520	0.052 2.040	0.113 4.440	0.107 4.200	0.137 5.400	0.049 1.920	0.113 4.440	0.107 4.200	0.137 5.400	0.046 1.800	0.113 4.440	0.104 4.080	0.140 5.520	0.049 1.920				
STD DEV	0.006 0.253	0.008 0.239	0.009 0.355	0.005 0.201	0.005 0.188	0.005 0.199	0.006 0.246	0.006 0.219	0.004 0.248	0.004 0.149	0.005 0.192	0.004 0.148	0.007 0.293	0.004 0.157	0.004 0.163	0.004 0.152	0.005 0.313	0.004 0.165	0.005 0.186	0.004 0.152				

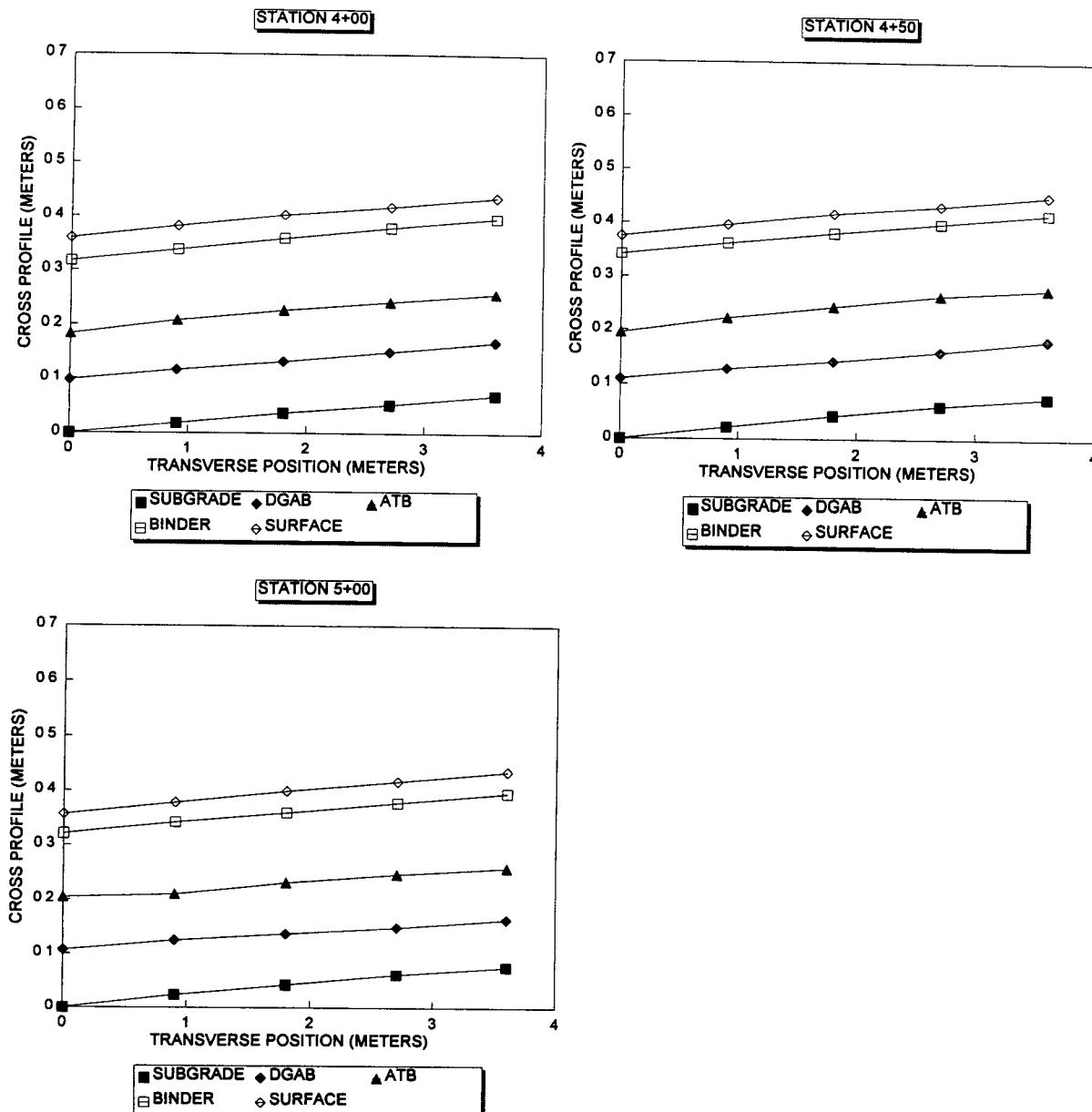
SECTION 050117



SECTION 050117

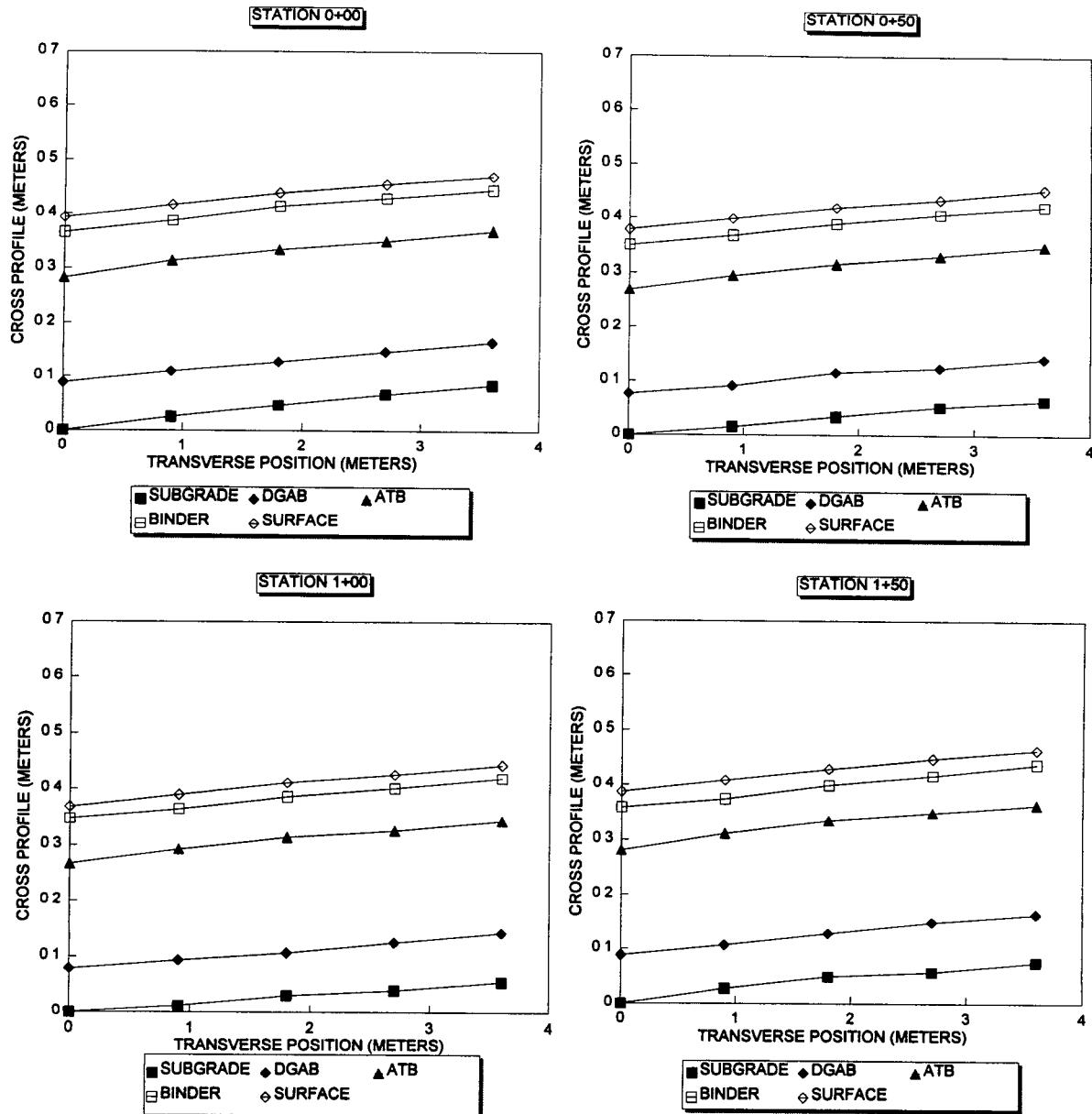


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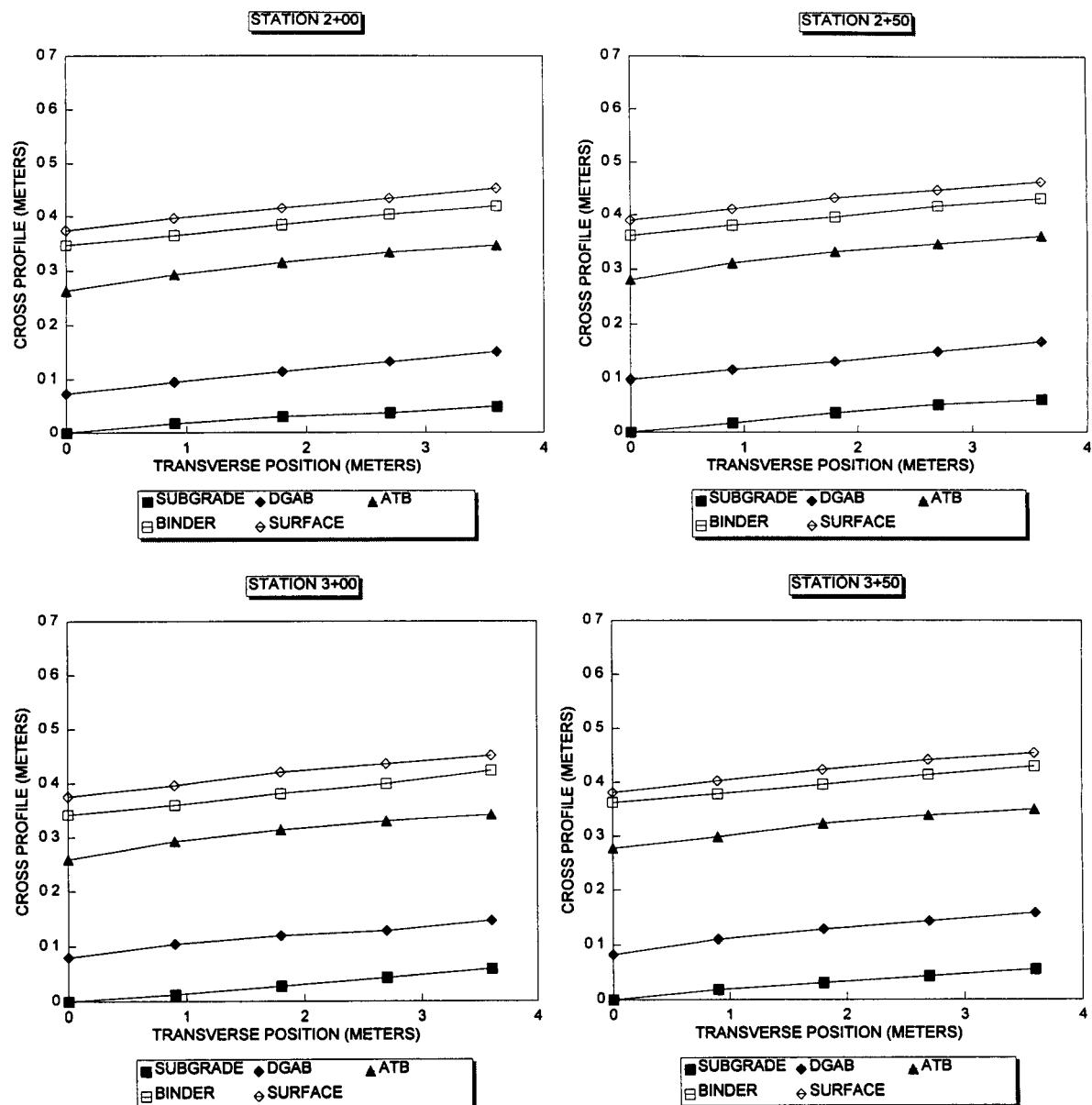


Trans Offset	ARKANSAS																			
	0.0M				0.84M				1.68M				2.52M				3.35M			
	DGAB Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	ATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)
0+00	0.088 3.48	0.195 7.68	0.082 3.24	0.027 1.08	0.085 3.38	0.204 8.04	0.073 2.88	0.030 1.2	0.082 3.24	0.207 8.16	0.079 3.12	0.024 0.98	0.079 3.12	0.204 8.04	0.078 3.12	0.024 0.98	0.079 3.12	0.204 8.04	0.078 3	0.024 0.98
0+50	0.076 3	0.192 7.56	0.082 3.24	0.027 1.08	0.076 3	0.204 8.04	0.073 2.88	0.030 1.2	0.082 3.24	0.201 7.92	0.073 2.88	0.030 1.2	0.073 2.88	0.207 8.16	0.076 3	0.027 1.08	0.079 3.12	0.207 8.16	0.073 2.88	0.030 1.2
1+00	0.079 3.12	0.186 7.32	0.082 3.24	0.021 0.84	0.082 3.24	0.198 7.8	0.073 2.88	0.024 0.98	0.076 3	0.207 8.16	0.073 2.88	0.024 0.98	0.085 3.36	0.201 7.92	0.076 3	0.024 0.98	0.088 3.48	0.201 7.92	0.076 3	0.024 0.98
1+50	0.088 3.48	0.192 7.56	0.079 3.12	0.027 1.08	0.079 3.12	0.204 8.04	0.064 2.52	0.034 1.32	0.079 3.12	0.207 8.16	0.064 2.52	0.030 1.2	0.091 3.6	0.201 7.92	0.067 2.84	0.030 1.2	0.088 3.48	0.201 7.92	0.073 2.88	0.024 0.98
2+00	0.073 2.88	0.189 7.44	0.085 3.36	0.027 1.08	0.076 3	0.198 7.8	0.073 2.88	0.030 1.2	0.082 3.24	0.201 7.92	0.070 2.76	0.030 1.2	0.094 3.72	0.201 7.92	0.070 2.76	0.030 1.2	0.101 3.96	0.195 7.88	0.073 2.88	0.034 1.32
2+50	0.098 3.84	0.183 7.2	0.082 3.24	0.027 1.08	0.098 3.84	0.195 7.68	0.070 2.76	0.030 1.2	0.094 3.72	0.201 7.92	0.064 2.52	0.037 1.44	0.098 3.84	0.198 7.8	0.070 2.76	0.030 1.2	0.107 4.2	0.195 7.68	0.070 2.76	0.030 1.2
3+00	0.079 3.12	0.180 7.08	0.082 3.24	0.034 1.32	0.091 3.6	0.189 7.44	0.067 2.64	0.037 1.44	0.091 3.6	0.195 7.68	0.067 2.64	0.040 1.56	0.085 3.36	0.201 7.92	0.070 2.76	0.037 1.44	0.088 3.48	0.195 7.68	0.082 3.24	0.027 1.08
3+50	0.082 3.24	0.195 7.68	0.085 3.36	0.018 0.72	0.091 3.6	0.189 7.44	0.079 3.12	0.024 0.98	0.098 3.84	0.195 7.68	0.073 2.88	0.027 1.08	0.101 3.96	0.195 7.68	0.076 3	0.027 1.08	0.104 4.08	0.192 7.56	0.079 3.12	0.024 0.98
4+00	0.082 3.24	0.189 7.44	0.087 2.64	0.040 1.56	0.085 3.36	0.189 7.44	0.067 2.64	0.040 1.56	0.085 3.36	0.189 7.44	0.076 3	0.034 1.32	0.085 3.36	0.192 7.56	0.076 3	0.034 1.32	0.088 3.48	0.189 7.44	0.079 3.12	0.034 1.32
4+50	0.098 3.84	0.189 7.44	0.076 3	0.030 1.2	0.101 3.96	0.195 7.68	0.064 2.52	0.034 1.32	0.101 3.96	0.201 7.82	0.064 2.52	0.030 1.2	0.098 3.84	0.204 8.04	0.067 2.64	0.027 1.08	0.101 3.96	0.192 7.56	0.073 2.88	0.034 1.32
5+00	0.084 3.72	0.201 7.92	0.073 2.88	0.030 1.2	0.101 3.96	0.201 7.92	0.064 2.52	0.037 1.44	0.094 3.72	0.201 7.92	0.070 2.76	0.034 1.32	0.088 3.48	0.204 8.04	0.073 2.88	0.034 1.32	0.085 3.36	0.198 7.8	0.073 2.88	0.037 1.44
AVG	0.085 3.360	0.190 7.484	0.080 3.142	0.028 1.113	0.088 3.458	0.197 7.756	0.070 2.749	0.032 1.255	0.088 3.458	0.201 7.898	0.070 2.771	0.031 1.222	0.089 3.502	0.201 7.909	0.073 2.869	0.030 1.167	0.092 3.811	0.197 7.767	0.075 2.967	0.029 1.156
MIN	0.073 2.580	0.180 7.080	0.067 2.840	0.018 0.720	0.076 3.000	0.189 7.440	0.064 2.520	0.024 0.980	0.076 3.000	0.189 7.440	0.064 2.520	0.024 0.980	0.067 3.073	0.192 7.560	0.067 2.840	0.024 0.979	0.079 3.120	0.187 7.440	0.070 2.760	0.024 0.960
MAX	0.098 3.640	0.201 7.920	0.085 3.360	0.040 1.560	0.101 3.960	0.204 8.040	0.079 3.120	0.040 1.580	0.101 3.960	0.207 8.180	0.079 3.120	0.040 1.560	0.101 3.960	0.207 8.180	0.079 3.120	0.037 1.07	0.107 3.079	0.207 8.120	0.082 3.207	0.037 0.907
STD DEV	0.008 0.320	0.006 0.225	0.005 0.210	0.005 0.212	0.009 0.343	0.008 0.230	0.005 0.188	0.008 0.180	0.005 0.306	0.005 0.216	0.005 0.195	0.004 0.176	0.008 0.315	0.004 0.165	0.004 0.157	0.004 0.146	0.009 0.360	0.005 0.212	0.003 0.136	0.004 0.172

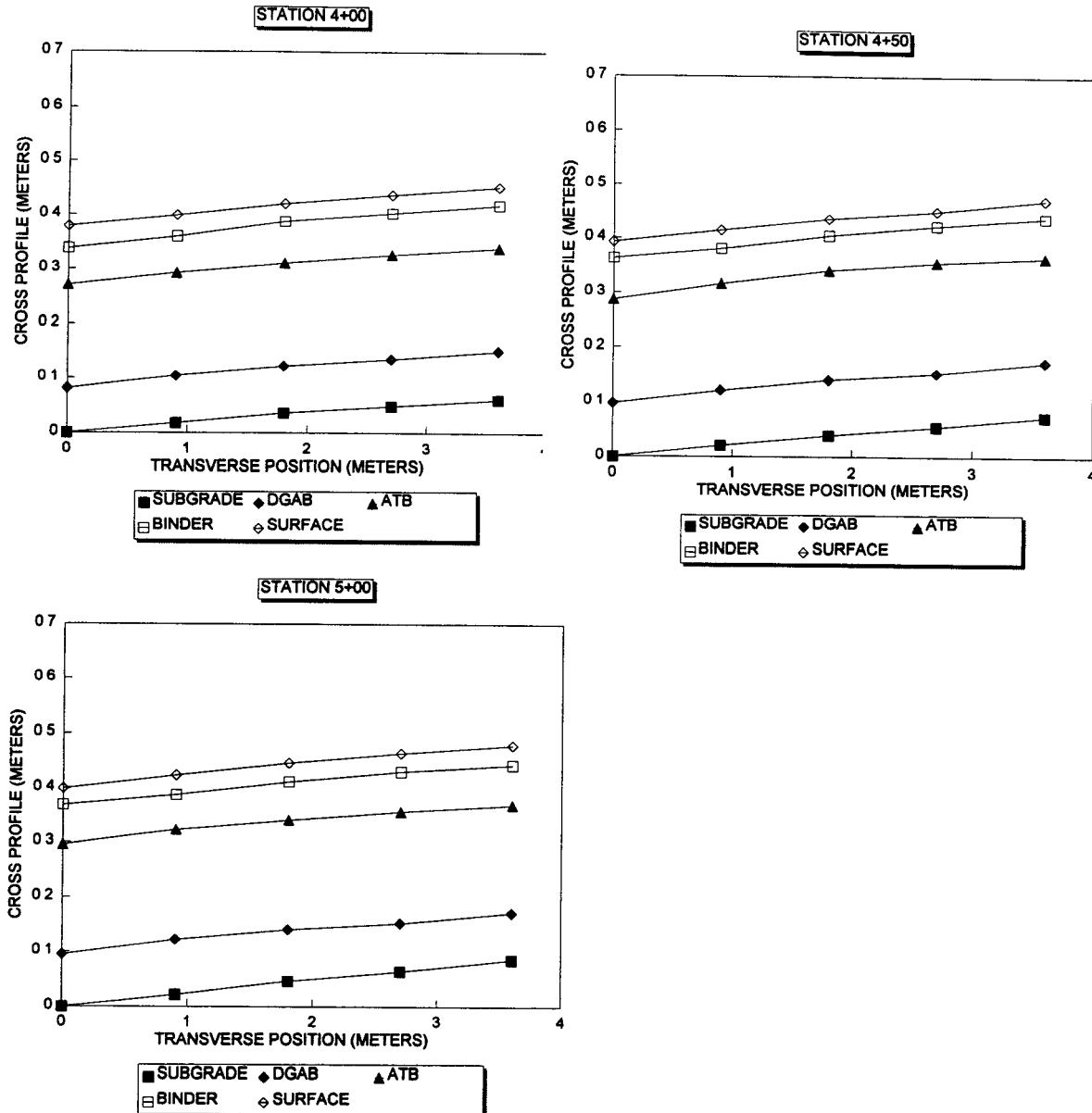
SECTION 050118



SECTION 050118

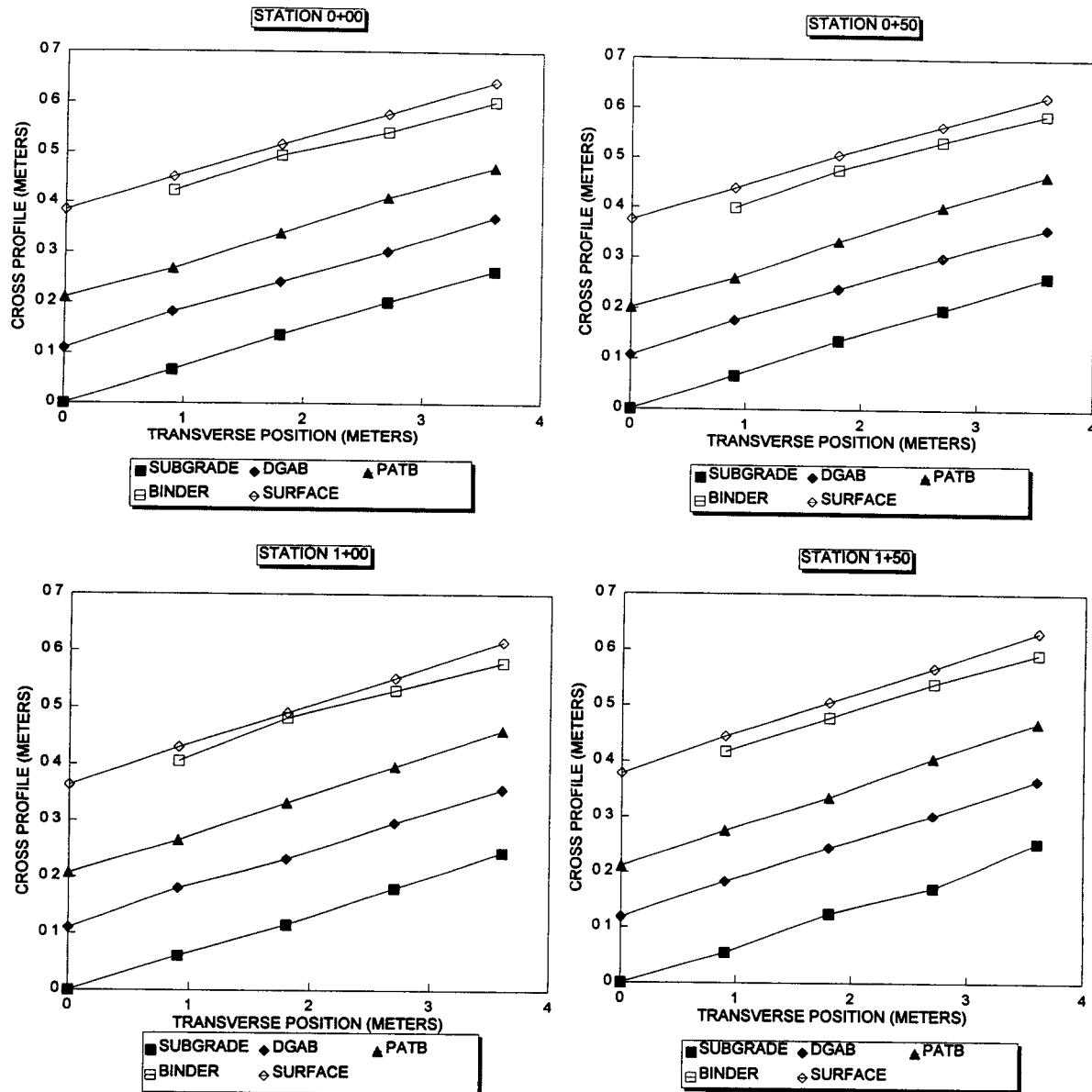


SECTION 050118

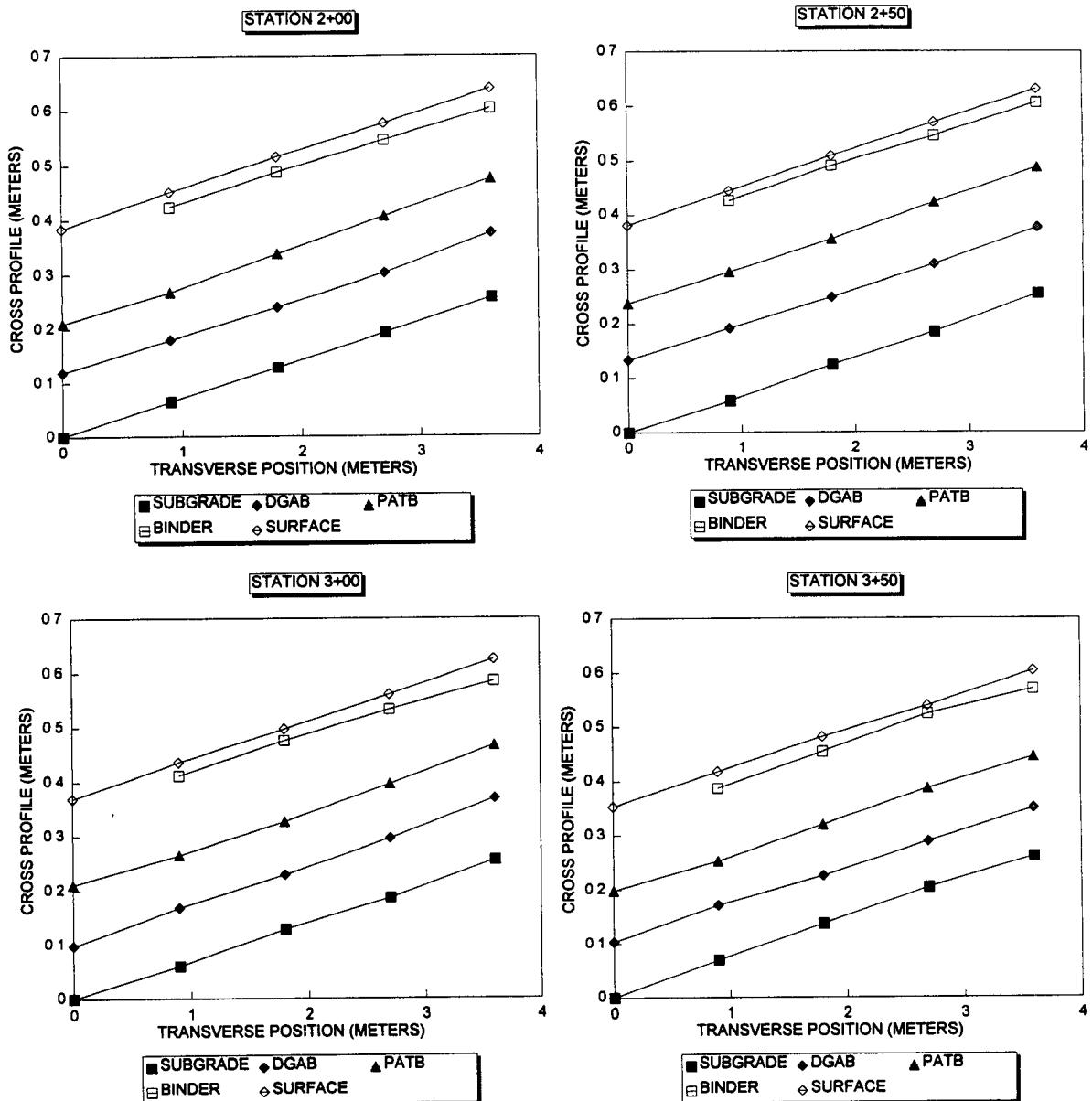


SECTION 050119				ARKANSAS																	
Trans	Offset	0.6M				0.8M				1.6M				2.52M				3.35M			
		DGAB Thickness (M) (in)	PATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	PATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	PATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	PATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)	DGAB Thickness (M) (in)	PATB Thickness (M) (in)	Binder Thickness (M) (in)	Surface Thickness (M) (in)
0+00		0.110 4.32	0.101 3.98			0.115824 4.56	0.085344 3.36	0.155448 6.12	0.027432 1.08	0.103632 4.08	0.097536 3.84	0.155448 6.12	0.021336 0.84	0.100584 3.98	0.10668 4.2	0.131064 5.16	0.036576 1.44	0.10668 4.2	0.100584 3.98	0.131064 5.16	0.039824 1.56
0+50		0.107 4.2	0.094 3.72			0.109728 4.32	0.082296 3.24	0.140208 5.52	0.039624 1.56	0.100584 3.98	0.094488 3.72	0.143256 5.64	0.03048 1.2	0.103632 4.08	0.100584 3.98	0.131064 5.16	0.03048 1.2	0.097536 3.84	0.10668 4.2	0.12192 4.6	0.036576 1.44
1+00		0.110 4.32	0.098 3.84			0.118872 4.68	0.085344 3.36	0.140208 5.52	0.024384 0.98	0.115824 4.56	0.100584 3.98	0.149352 5.88	0.009144 0.38	0.115824 4.56	0.100584 3.98	0.134112 5.28	0.021336 0.84	0.112776 4.44	0.103632 4.08	0.118872 4.68	0.036576 1.44
1+50		0.119 4.68	0.091 3.6			0.128016 5.04	0.08144 3.6	0.143256 5.64	0.027432 1.08	0.118872 4.68	0.09144 3.6	0.143256 5.64	0.027432 1.08	0.131064 5.16	0.103632 4.08	0.134112 5.28	0.027432 1.08	0.112776 4.44	0.103632 4.08	0.12192 4.6	0.039624 1.56
2+00		0.119 4.68	0.091 3.6			0.115824 4.56	0.088392 3.48	0.155448 6.12	0.027432 1.08	0.112776 4.44	0.097536 3.84	0.149352 5.88	0.027432 1.08	0.109728 4.32	0.103632 4.08	0.140208 5.52	0.03048 1.2	0.118872 4.68	0.100584 3.98	0.128016 5.04	0.036576 1.44
2+50		0.134 5.28	0.104 4.08			0.134112 5.28	0.103632 4.08	0.131064 5.16	0.018288 0.72	0.124968 4.92	0.10668 4.2	0.134112 5.28	0.018288 0.72	0.124968 4.92	0.112776 4.44	0.12192 4.8	0.024384 0.96	0.12192 4.32	0.109728 4.68	0.118872 4.68	0.024384 0.96
3+00		0.098 3.84	0.113 4.44			0.10668 4.2	0.097536 3.84	0.146304 5.78	0.024384 0.98	0.100584 3.98	0.097536 3.84	0.149352 5.88	0.021336 0.84	0.109728 4.32	0.100584 3.98	0.13716 5.4	0.027432 1.08	0.112776 4.44	0.097536 3.84	0.118872 4.68	0.039624 1.56
3+50		0.104 4.08	0.094 3.72			0.100584 3.98	0.082296 3.24	0.134112 5.28	0.03048 1.2	0.088392 3.48	0.094488 3.72	0.134112 5.28	0.027432 1.08	0.085344 3.36	0.097536 3.84	0.13716 5.4	0.01524 0.6	0.088392 3.48	0.094488 3.72	0.124968 4.92	0.033528 1.32
4+00		0.116 4.56	0.091 3.6			0.112776 4.44	0.09144 3.6	0.131064 5.16	0.024384 0.98	0.097536 3.84	0.094488 3.72	0.149352 5.88	0.018288 0.72	0.094488 3.72	0.09144 3.6	0.140208 5.52	0.027432 1.08	0.088392 3.48	0.09144 3.6	0.13716 5.4	0.03048 1.2
4+50		0.107 4.2	0.085 3.36			0.100584 3.98	0.085344 3.36	0.128016 5.04	0.033528 1.32	0.088392 3.48	0.100584 3.98	0.13716 5.4	0.024384 0.98	0.079248 3.12	0.103632 4.08	0.128016 5.04	0.033528 1.32	0.085344 3.36	0.097536 3.84	0.12192 4.6	0.04572 1.8
5+00		0.110 4.32	0.088 3.48			0.112776 4.44	0.079248 3.12	0.128016 5.04	0.027432 1.08	0.097536 3.84	0.097536 3.84	0.131064 5.16	0.018288 0.72	0.097536 3.84	0.100584 3.98	0.118872 4.68	0.024384 0.98	0.097536 3.84	0.12192 4.6	0.03048 1.2	
Avg		0.112 4.407	0.096 3.764			0.114 4.495	0.088 3.480	0.139 5.487	0.028 1.091	0.104 4.113	0.098 3.840	0.143 5.640	0.022 0.873	0.105 4.124	0.102 4.015	0.132 5.204	0.027 1.089	0.104 4.091	0.101 3.960	0.124 4.896	0.036 1.407
Min		0.098 3.840	0.085 3.360			0.101 3.960	0.079 3.120	0.128 5.040	0.018 0.720	0.088 3.480	0.098 3.600	0.131 5.160	0.009 0.360	0.079 3.120	0.091 3.600	0.119 4.680	0.015 0.600	0.091 3.860	0.085 3.600	0.119 4.680	0.024 1.024
Max		0.134 5.280	0.113 4.440			0.134 5.280	0.104 4.080	0.155 6.120	0.040 1.560	0.125 4.920	0.107 4.200	0.155 6.120	0.015 1.200	0.131 5.160	0.113 4.440	0.140 5.520	0.037 1.440	0.122 4.800	0.137 5.400	0.045 1.800	
STD Dev		0.009 3.368	0.007 0.291			0.010 0.388	0.007 0.271	0.010 0.376	0.005 0.455	0.012 0.154	0.004 0.303	0.008 0.591	0.006 0.229	0.015 0.201	0.005 0.262	0.005 0.220	0.005 0.489	0.006 0.208	0.005 0.226	0.006 0.218	

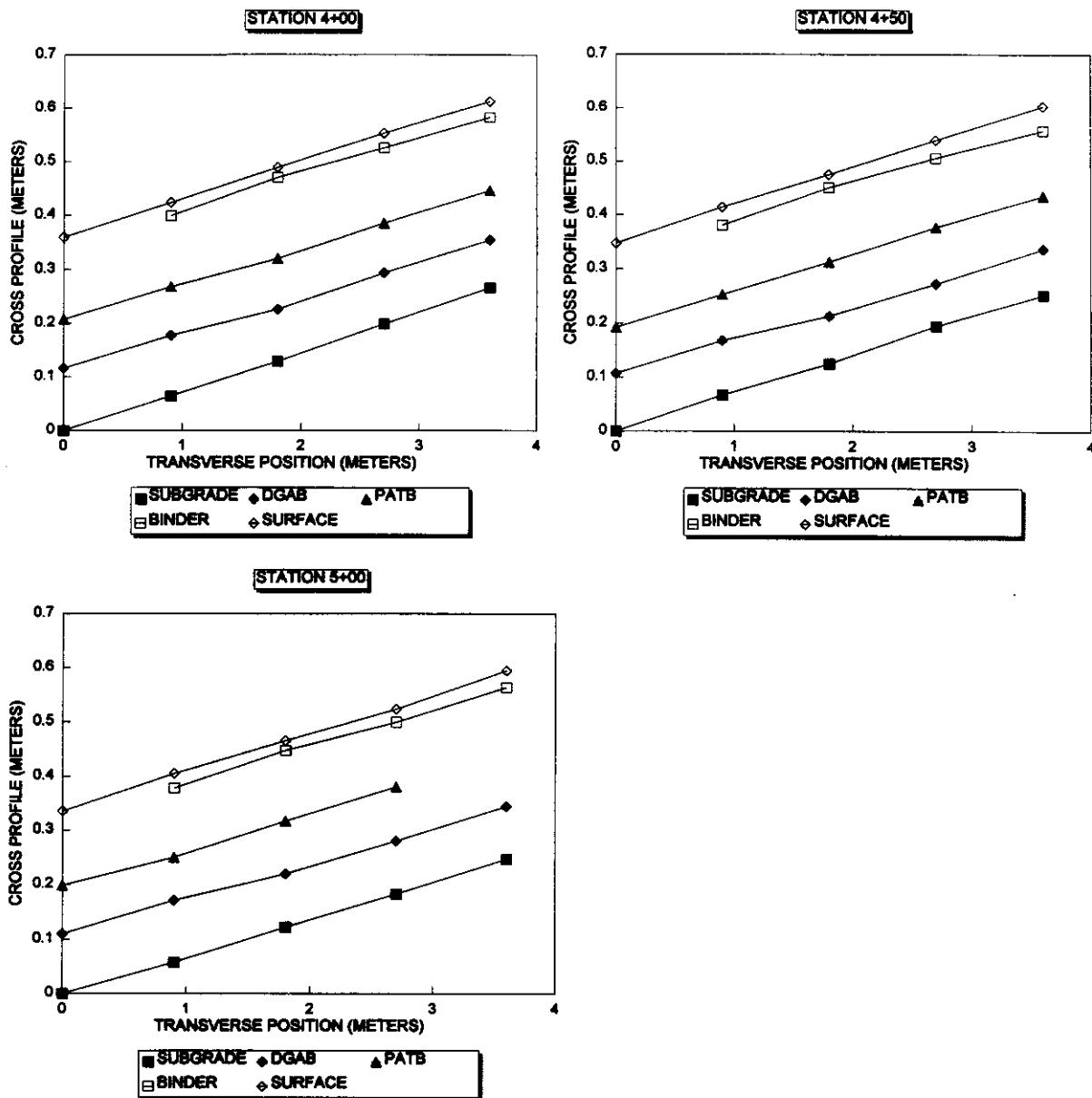
SECTION 050119



SECTION 050119

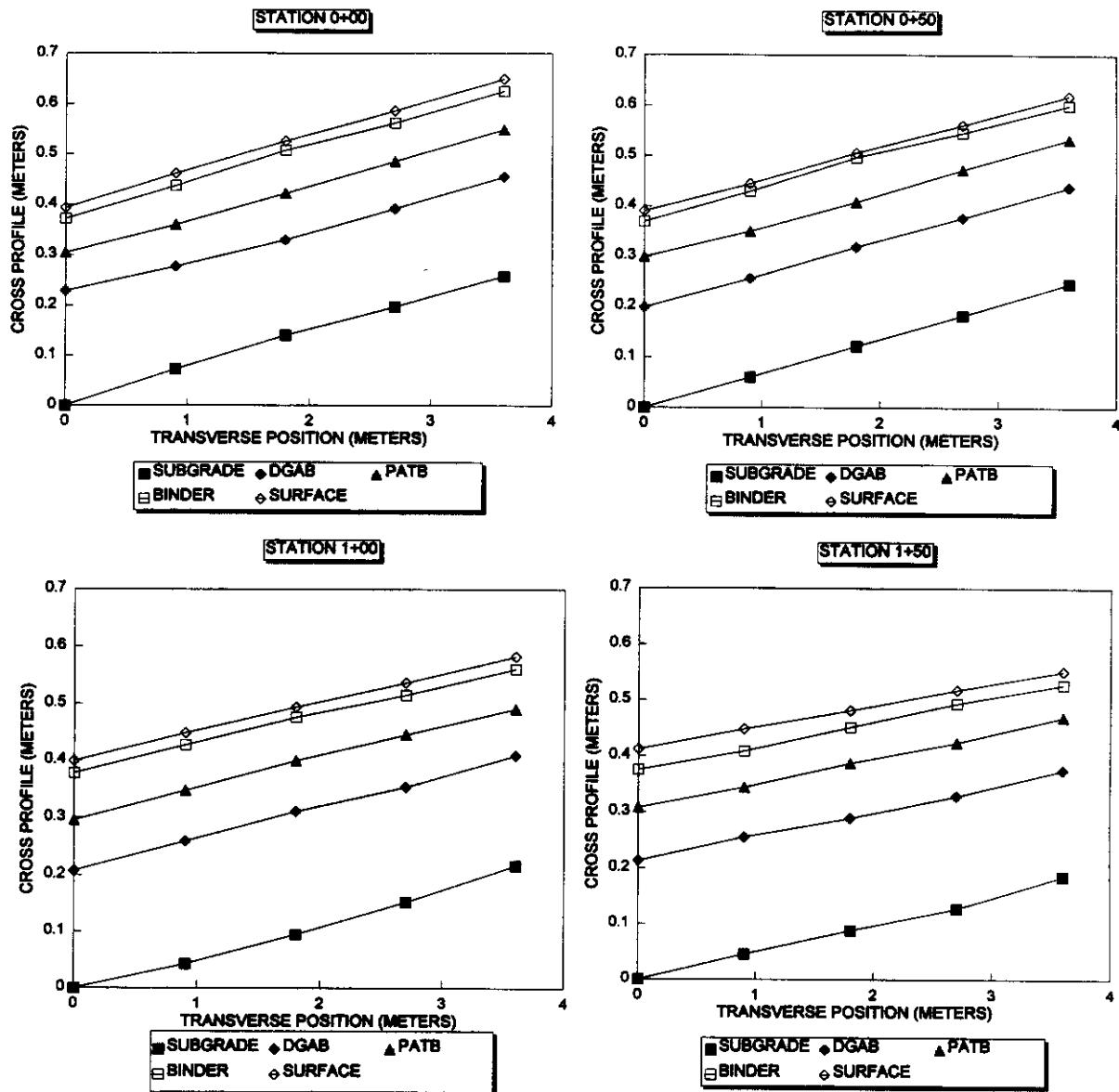


SECTION 050119

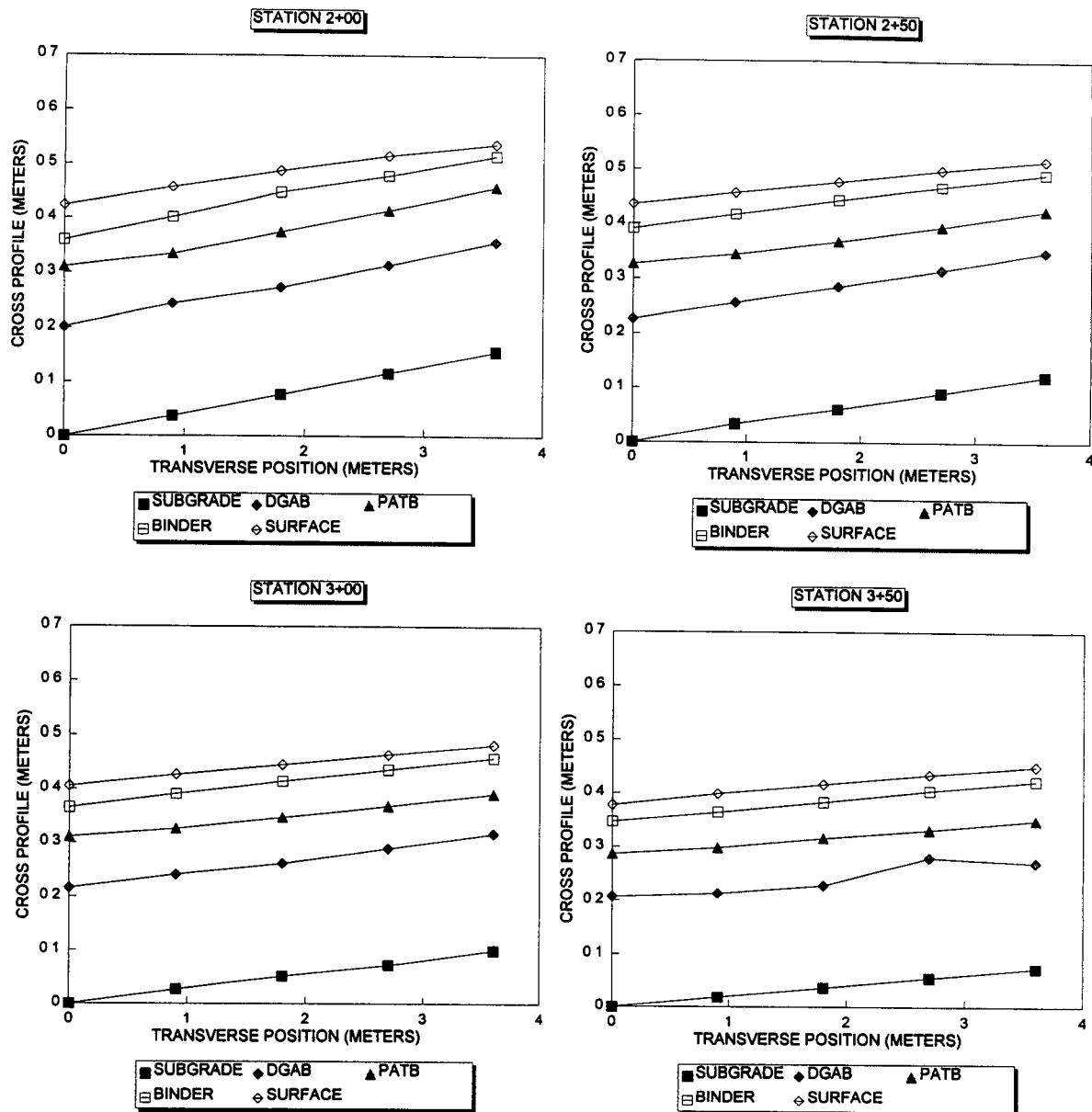


ARKANSAS																				
Trans Offset	0.0M				0.84M				1.68M				2.52M				3.35M			
	DGAB Thickness (mm) (in)	PATB Thickness (mm) (in)	Binder Thickness (mm) (in)	Surface Thickness (mm) (in)	DGAB Thickness (mm) (in)	PATB Thickness (mm) (in)	Binder Thickness (mm) (in)	Surface Thickness (mm) (in)	DGAB Thickness (mm) (in)	PATB Thickness (mm) (in)	Binder Thickness (mm) (in)	Surface Thickness (mm) (in)	DGAB Thickness (mm) (in)	PATB Thickness (mm) (in)	Binder Thickness (mm) (in)	Surface Thickness (mm) (in)	DGAB Thickness (mm) (in)	PATB Thickness (mm) (in)	Binder Thickness (mm) (in)	Surface Thickness (mm) (in)
0+00	0.229 9	0.078 3	0.087 2.64	0.021 0.84	0.204 8.04	0.082 3.24	0.078 3	0.024 0.98	0.188 7.44	0.091 3.6	0.085 3.36	0.018 0.72	0.195 7.88	0.094 3.72	0.076 3	0.024 0.96	0.198 7.8	0.094 3.72	0.076 3	0.024 0.96
0+50	0.198 7.8	0.101 3.96	0.070 2.76	0.021 0.84	0.195 7.88	0.094 3.72	0.079 3.12	0.015 0.86	0.198 7.8	0.088 3.48	0.088 3.48	0.009 0.36	0.195 7.88	0.094 3.72	0.073 2.88	0.015 0.6	0.192 7.56	0.094 3.72	0.067 2.64	0.018 0.72
1+00	0.207 8.16	0.088 3.48	0.082 3.24	0.021 0.84	0.218 8.52	0.088 3.48	0.078 3.12	0.021 0.84	0.216 8.52	0.088 3.48	0.078 3	0.018 0.72	0.201 7.92	0.091 3.6	0.070 2.76	0.021 0.84	0.192 7.56	0.082 3.24	0.070 2.76	0.021 0.84
1+50	0.213 8.4	0.094 3.72	0.087 2.64	0.037 1.44	0.210 8.28	0.088 3.48	0.064 2.52	0.040 1.56	0.201 7.92	0.098 3.84	0.084 2.52	0.030 1.2	0.201 7.92	0.094 3.72	0.070 2.76	0.024 0.96	0.169 7.44	0.094 3.72	0.058 2.28	0.024 0.96
2+00	0.201 7.92	0.110 4.32	0.049 1.92	0.064 2.52	0.207 8.16	0.091 3.6	0.067 2.64	0.055 2.16	0.188 7.8	0.101 3.98	0.073 2.88	0.040 1.56	0.198 7.8	0.101 3.98	0.064 2.52	0.037 1.44	0.201 7.92	0.101 3.96	0.058 2.28	0.021 0.84
2+50	0.228 8.88	0.101 3.96	0.084 2.52	0.048 1.8	0.223 8.78	0.088 3.48	0.073 2.88	0.040 1.56	0.226 8.88	0.082 3.24	0.076 3	0.034 1.32	0.226 8.88	0.079 3.12	0.073 2.88	0.030 1.2	0.229 9	0.078 3	0.067 2.64	0.024 0.96
3+00	0.216 8.52	0.094 3.72	0.055 2.16	0.040 1.56	0.213 8.4	0.085 3.36	0.064 2.52	0.037 1.44	0.210 8.28	0.085 3.36	0.067 2.64	0.030 1.2	0.216 8.52	0.079 3.12	0.067 2.64	0.027 1.08	0.216 8.52	0.073 2.88	0.067 2.64	0.024 0.96
3+50	0.207 8.16	0.079 3.12	0.081 2.4	0.030 1.2	0.195 7.68	0.085 3.36	0.067 2.64	0.034 1.32	0.192 7.56	0.088 3.48	0.067 2.64	0.034 1.32	0.226 8.88	0.052 2.04	0.073 2.88	0.030 1.2	0.198 7.8	0.079 3.12	0.073 2.88	0.027 1.08
4+00	0.219 8.64	0.082 3.24	0.064 2.52	0.021 0.84	0.216 8.52	0.082 3.24	0.070 2.76	0.021 0.84	0.207 8.16	0.094 3.72	0.064 2.52	0.024 0.96	0.216 8.52	0.088 3.48	0.070 2.76	0.024 0.96	0.210 8.28	0.082 3.24	0.070 2.76	0.027 1.08
4+50	0.204 8.04	0.094 3.72	0.052 2.04	0.027 1.08	0.207 8.16	0.088 3.48	0.058 2.28	0.027 1.08	0.204 8.04	0.088 3.48	0.061 2.4	0.027 1.08	0.210 8.28	0.079 3.12	0.070 2.76	0.021 0.84	0.207 8.16	0.076 3	0.067 2.64	0.027 1.08
5+00	0.213 8.4	0.085 3.36	0.081 2.4	0.021 0.84	0.210 8.28	0.085 3.36	0.064 2.52	0.024 0.96	0.207 8.16	0.088 3.48	0.070 2.76	0.021 0.84	0.207 8.16	0.088 3.48	0.070 2.76	0.021 0.96	0.210 8.28	0.081 3.6	0.064 2.52	0.024 0.96
AVG	0.212 8.356	0.091 3.600	0.063 2.476	0.032 1.255	0.209 8.225	0.087 3.438	0.069 2.727	0.031 1.211	0.204 8.051	0.090 3.556	0.072 2.836	0.026 1.025	0.208 8.204	0.088 3.371	0.071 2.782	0.025 0.993	0.204 8.029	0.086 3.382	0.067 2.640	0.024 0.949
MIN	0.198 7.800	0.076 3.000	0.049 1.920	0.021 0.840	0.195 7.680	0.082 3.240	0.058 2.280	0.015 0.800	0.189 7.440	0.082 3.240	0.061 2.400	0.009 0.360	0.195 7.680	0.052 2.040	0.064 2.520	0.015 0.600	0.189 7.440	0.073 2.880	0.073 2.280	0.018 0.720
MAX	0.229 9.000	0.110 4.320	0.082 3.240	0.064 2.520	0.223 8.760	0.094 3.720	0.079 3.120	0.055 2.180	0.226 8.880	0.101 3.980	0.088 3.480	0.040 1.560	0.226 8.880	0.101 3.980	0.076 3.000	0.037 1.440	0.229 9.000	0.073 3.960	0.076 3.000	0.027 1.080
STD DEV	0.009 0.366	0.010 0.383	0.009 0.348	0.013 0.515	0.008 0.321	0.008 0.138	0.004 0.281	0.004 0.426	0.007 0.398	0.011 0.200	0.005 0.333	0.008 0.329	0.008 0.426	0.011 0.500	0.003 0.123	0.006 0.218	0.008 0.450	0.005 0.354	0.005 0.211	0.003 0.108

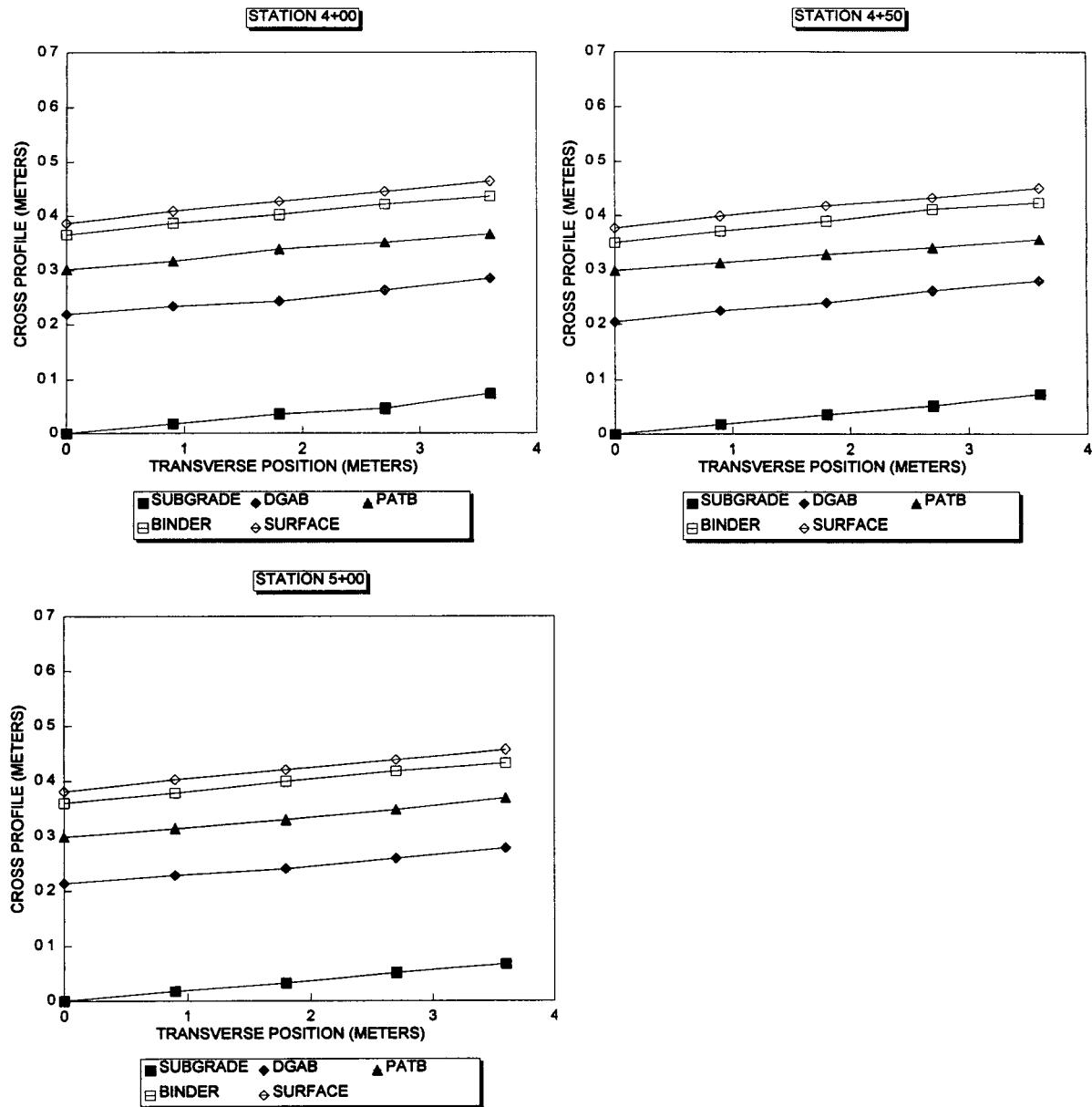
SECTION 050120



SECTION 050120

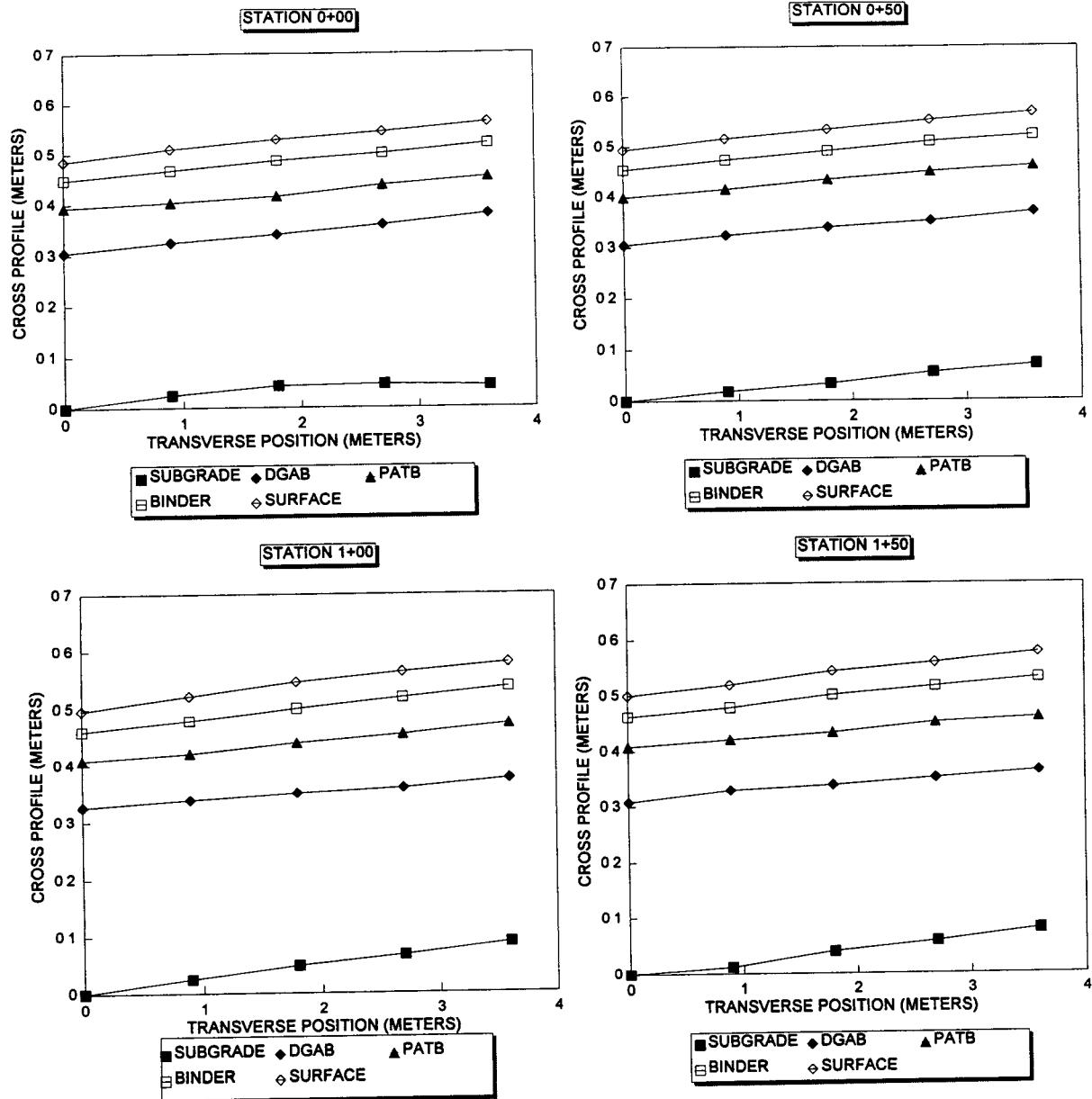


SECTION 050120

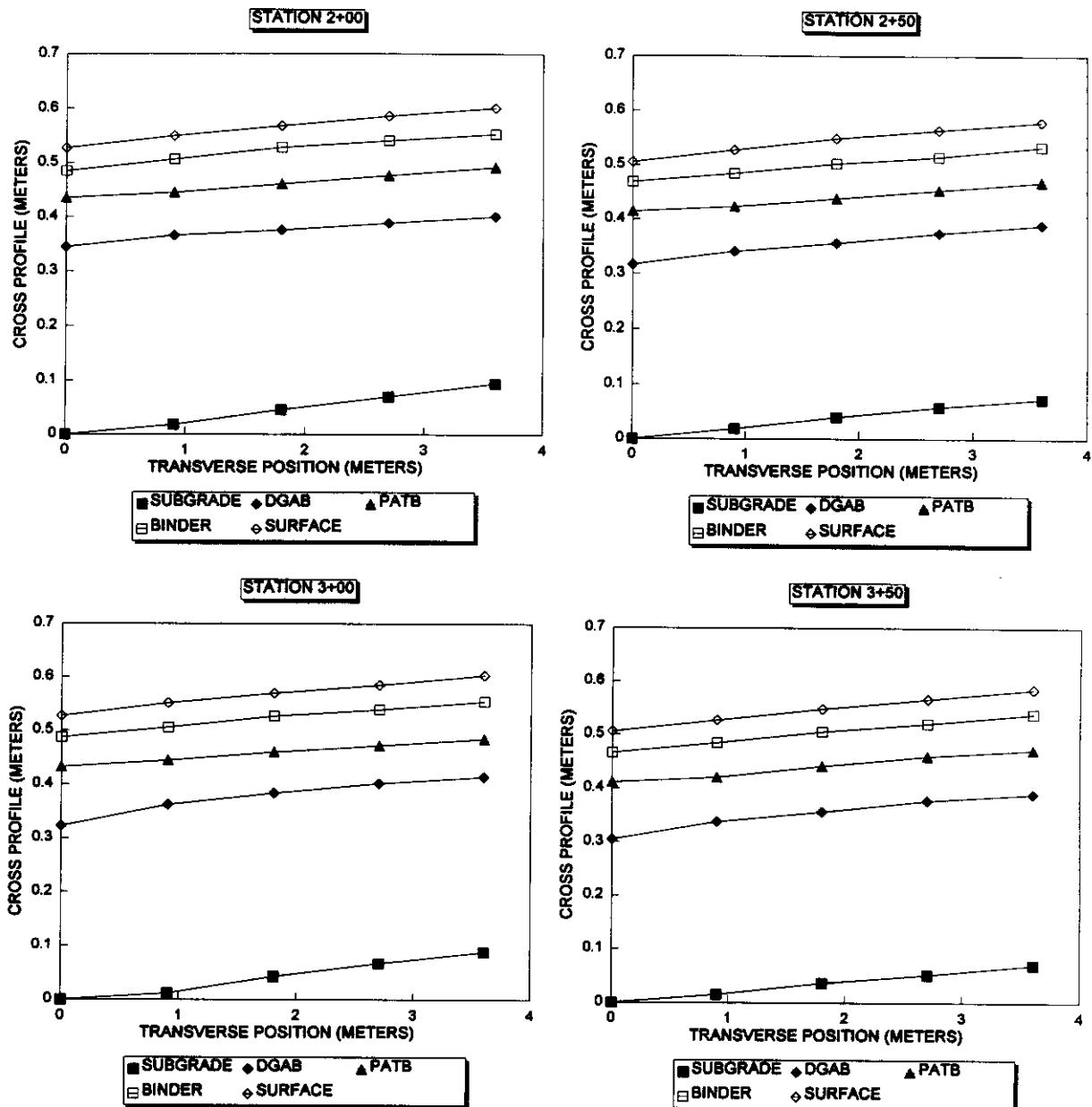


SECTION D50121																					
0.000				0.044				0.088				1.000				2.024					
Trans. Offset	DGAB Thickness	PATB Thickness	Binder Thickness	Surface Thickness	DGAB Thickness	PATB Thickness	Binder Thickness	Surface Thickness	DGAB Thickness	PATB Thickness	Binder Thickness	Surface Thickness	DGAB Thickness	PATB Thickness	Binder Thickness	Surface Thickness	DGAB Thickness	PATB Thickness	Binder Thickness	Surface Thickness	
0+00	0.305	0.068	0.085	0.057	0.298	0.078	0.064	0.043	0.286	0.078	0.070	0.043	0.311	0.078	0.064	0.043	0.335	0.073	0.067	0.043	
	12	3.48	2.16	1.44	11.76	3.12	2.52	1.68	11.64	3	2.76	1.68	12.24	3.12	2.52	1.68	13.2	2.88	2.64	1.68	
	0+50	0.305	0.064	0.055	0.040	0.305	0.061	0.058	0.043	0.305	0.064	0.058	0.043	0.296	0.066	0.061	0.043	0.299	0.061	0.061	0.046
	12	3.72	2.16	1.56	12	3.8	2.28	1.68	12	3.72	2.28	1.68	11.84	3.84	2.4	1.68	11.76	3.6	2.4	1.6	
	1+00	0.326	0.082	0.052	0.037	0.314	0.082	0.058	0.043	0.302	0.088	0.061	0.046	0.293	0.084	0.064	0.046	0.287	0.086	0.064	0.043
	12.64	3.24	2.04	1.44	12.36	3.24	2.28	1.68	11.88	3.48	2.4	1.8	11.52	3.72	2.52	1.6	11.28	3.84	2.52	1.68	
	1+50	0.306	0.101	0.055	0.037	0.317	0.061	0.058	0.040	0.298	0.084	0.067	0.043	0.283	0.101	0.064	0.043	0.283	0.096	0.070	0.046
	12.12	3.96	2.16	1.44	12.48	3.6	2.28	1.56	11.76	3.72	2.84	1.68	11.52	3.86	2.52	1.68	11.18	3.84	2.76	1.6	
	2+00	0.344	0.091	0.048	0.043	0.347	0.079	0.061	0.043	0.329	0.085	0.067	0.040	0.317	0.088	0.064	0.046	0.305	0.091	0.061	0.046
	13.56	3.6	1.92	1.68	13.86	3.12	2.4	1.68	12.96	3.36	2.84	1.56	12.48	3.48	2.52	1.6	12	3.8	2.4	1.62	
2+50	0.317	0.086	0.055	0.037	0.323	0.082	0.061	0.043	0.317	0.082	0.064	0.046	0.317	0.079	0.061	0.049	0.317	0.079	0.064	0.046	
	12.48	3.84	2.16	1.44	12.72	3.24	2.4	1.68	12.48	3.24	2.52	1.6	12.48	3.12	2.4	1.62	12.48	3.12	2.52	1.6	
	3+00	0.323	0.110	0.055	0.040	0.351	0.082	0.061	0.048	0.341	0.076	0.067	0.043	0.335	0.070	0.067	0.046	0.326	0.070	0.070	0.049
	12.72	4.32	2.16	1.56	13.8	3.24	2.4	1.8	13.44	3	2.84	1.68	13.2	2.76	2.64	1.6	12.84	2.76	2.76	1.92	
	3+50	0.305	0.107	0.055	0.040	0.323	0.082	0.064	0.043	0.320	0.085	0.064	0.043	0.328	0.082	0.061	0.046	0.320	0.082	0.067	0.046
	12	4.2	2.16	1.56	12.72	3.24	2.52	1.68	12.6	3.36	2.52	1.68	12.84	3.24	2.4	1.6	12.6	3.24	2.64	1.6	
	4+00	0.317	0.079	0.084	0.040	0.311	0.085	0.067	0.043	0.311	0.081	0.067	0.043	0.308	0.091	0.070	0.040	0.305	0.084	0.067	0.040
	12.48	3.12	2.52	1.56	12.24	3.38	2.64	1.68	12.24	3.6	2.84	1.68	12.12	3.6	2.76	1.56	12	3.72	2.64	1.56	
	4+50	0.306	0.091	0.084	0.040	0.308	0.091	0.067	0.043	0.305	0.098	0.070	0.040	0.299	0.110	0.061	0.043	0.302	0.107	0.064	0.040
	12.12	3.6	2.52	1.56	12.12	3.6	2.64	1.68	12	3.84	2.76	1.56	11.76	4.32	2.4	1.68	11.88	4.2	2.52	1.56	
5+00	0.308	0.091	0.081	0.046	0.317	0.085	0.064	0.049	0.314	0.084	0.064	0.046	0.311	0.104	0.061	0.043	0.308	0.107	0.067	0.037	
	12.12	3.6	2.4	1.6	12.48	3.36	2.52	1.62	12.36	3.72	2.52	1.6	12.24	4.06	2.4	1.68	12.12	4.2	2.64	1.44	
	Avg	0.315	0.094	0.056	0.039	0.319	0.085	0.062	0.043	0.313	0.086	0.065	0.043	0.310	0.091	0.063	0.044	0.306	0.090	0.066	0.044
	Min	12.404	3.898	2.215	1.546	12.578	3.338	2.444	1.782	12.305	3.458	2.575	1.691	12.186	3.587	2.498	1.735	12.120	3.545	2.585	1.724
	Max	0.305	0.078	0.048	0.037	0.298	0.079	0.059	0.040	0.296	0.078	0.068	0.040	0.293	0.070	0.061	0.040	0.293	0.070	0.061	0.037
STD Dev	12.000	3.120	1.920	1.440	11.760	3.120	2.280	1.560	11.840	3.000	2.280	1.560	11.520	2.780	2.400	1.560	11.180	2.780	2.400	1.440	
	13.580	4.320	2.520	1.800	13.800	3.800	2.840	1.820	13.440	3.840	2.780	1.800	13.200	4.320	2.780	1.820	13.200	4.200	2.780	1.920	

SECTION 050121

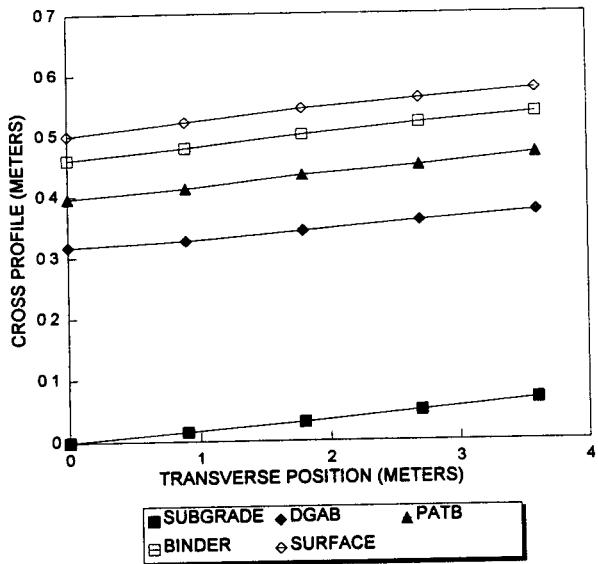


SECTION 050121

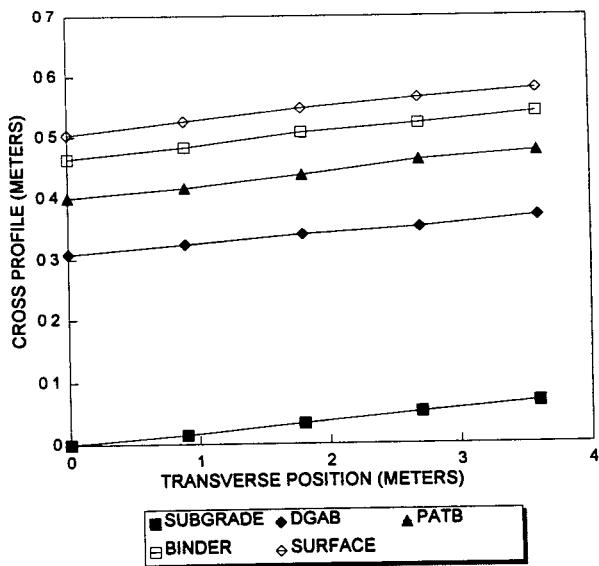


SECTION 050121

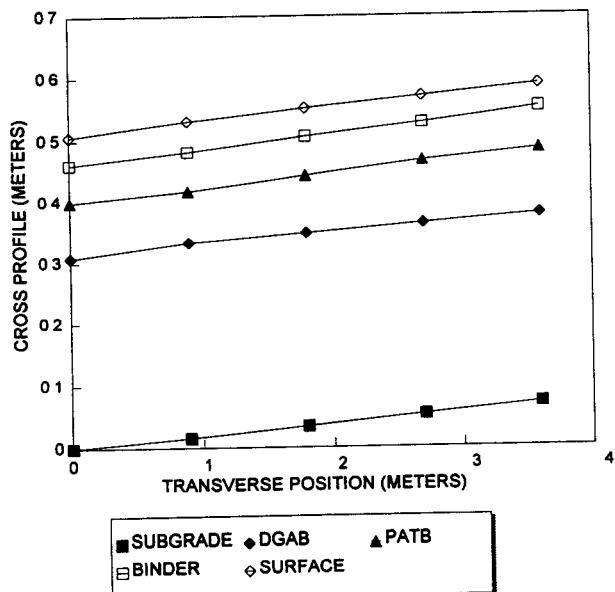
STATION 4+00



STATION 4+50



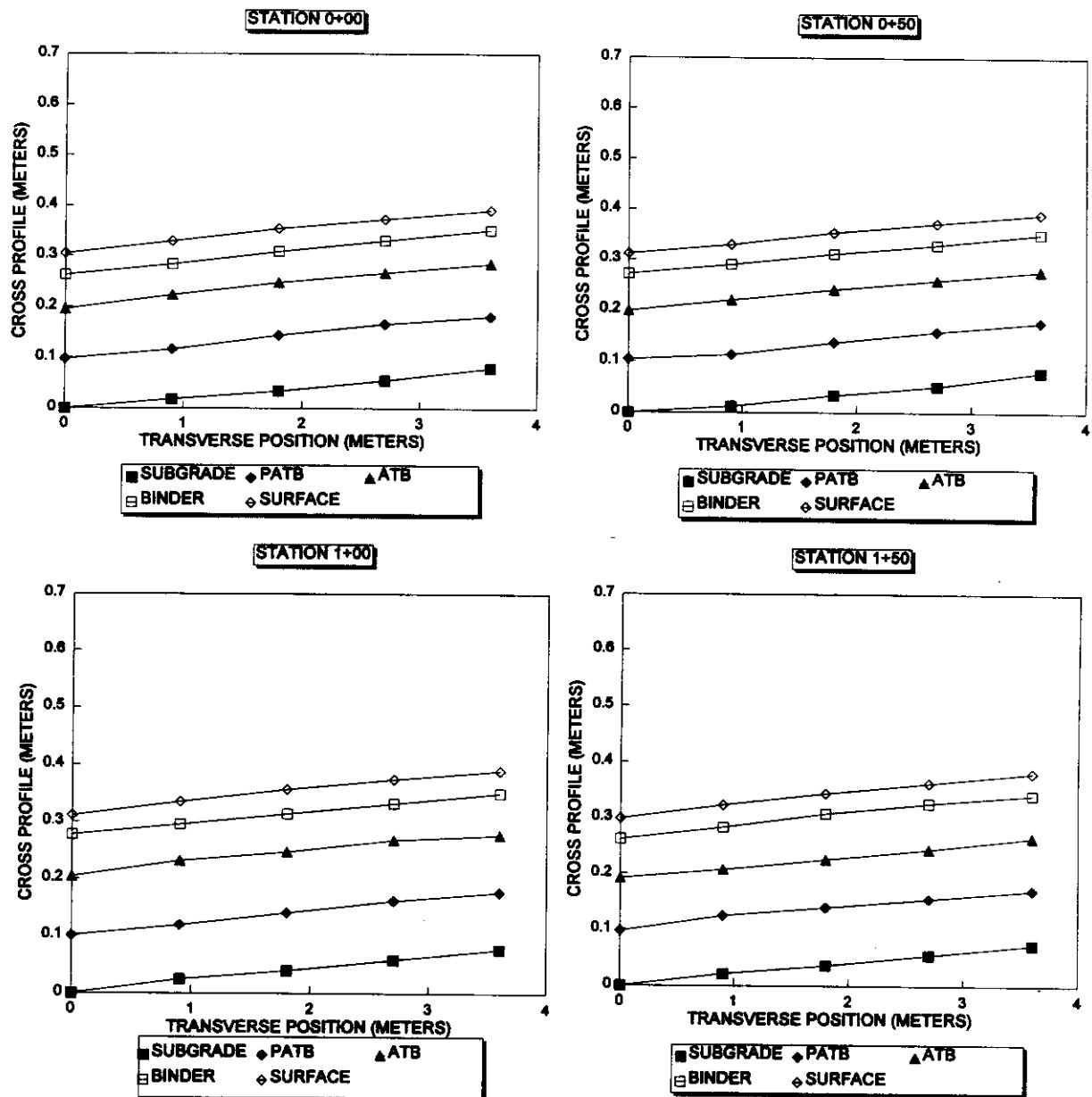
STATION 5+00



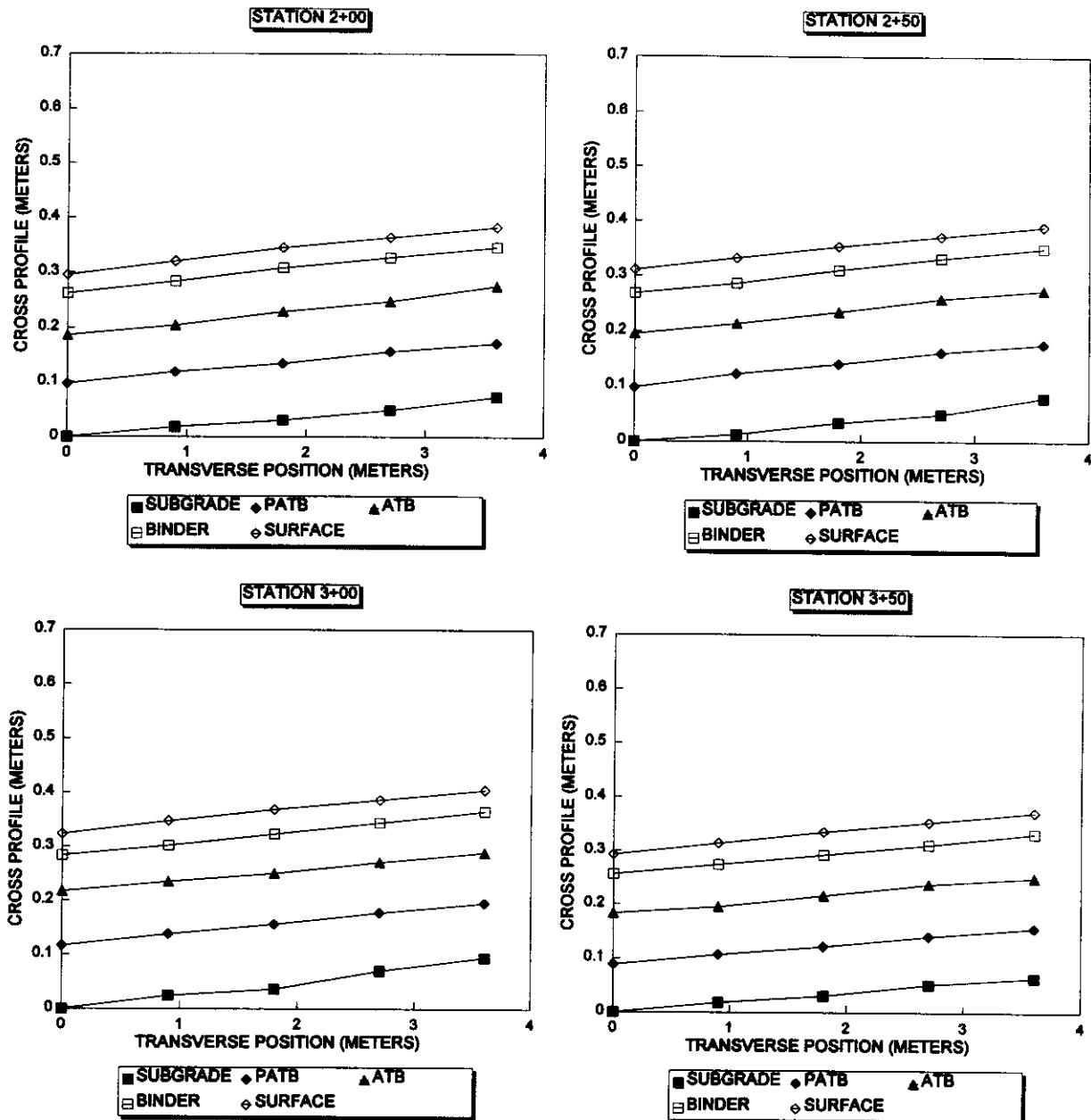
SECTION D50122

Time Offset	0.0M				0.84M				ARKANSAS				2.82M				3.3M			
	PATS Thickness (in) (mm)	ATB Thickness (in) (mm)	Binder Thickness (in) (mm)	Surface Thickness (in) (mm)																
0+00	0.068 3.84	0.068 3.84	0.067 2.04	0.043 1.66	0.068 3.84	0.107 4.2	0.061 2.4	0.046 1.6	0.110 4.32	0.104 4.08	0.061 2.4	0.046 1.6	0.110 4.32	0.101 3.86	0.064 2.52	0.043 1.66	0.101 3.86	0.104 4.08	0.067 2.84	0.040 1.56
0+50	0.104 4.08	0.064 3.72	0.073 2.68	0.040 1.56	0.101 3.96	0.107 4.2	0.070 2.76	0.040 1.56	0.104 4.08	0.104 4.06	0.070 2.76	0.043 1.66	0.107 4.2	0.101 3.86	0.070 2.76	0.043 1.66	0.098 3.84	0.101 3.96	0.073 2.88	0.040 1.56
1+00	0.101 3.86	0.104 4.08	0.073 2.68	0.034 1.32	0.084 3.72	0.113 4.44	0.064 2.62	0.040 1.56	0.101 3.96	0.107 4.2	0.067 2.64	0.043 1.66	0.104 4.08	0.107 4.2	0.084 2.52	0.043 1.66	0.101 3.86	0.101 3.96	0.073 2.88	0.040 1.56
1+50	0.068 3.84	0.064 3.72	0.070 2.76	0.037 1.44	0.104 4.08	0.062 3.24	0.078 3	0.040 1.56	0.104 4.08	0.065 3.36	0.062 3.24	0.037 1.44	0.101 3.96	0.068 3.48	0.062 3.24	0.037 1.44	0.096 3.84	0.094 3.72	0.076 3	0.040 1.56
2+00	0.068 3.84	0.068 3.48	0.076 3	0.034 1.32	0.101 3.96	0.065 3.36	0.078 3.12	0.037 1.44	0.104 4.08	0.094 3.72	0.070 3.12	0.037 1.44	0.107 4.2	0.061 3.8	0.079 3.12	0.037 1.44	0.096 3.84	0.104 4.08	0.070 2.76	0.037 1.44
2+50	0.068 3.84	0.066 3.84	0.073 2.68	0.043 1.56	0.110 4.32	0.081 3.6	0.073 2.86	0.046 1.56	0.107 4.2	0.094 3.72	0.076 3	0.043 1.66	0.113 4.44	0.066 3.84	0.073 2.86	0.040 1.56	0.096 3.84	0.098 3.84	0.076 3	0.040 1.56
3+00	0.116 4.56	0.101 3.96	0.067 2.64	0.040 1.56	0.113 4.44	0.068 3.84	0.067 2.64	0.046 1.56	0.110 4.36	0.064 3.72	0.073 2.86	0.046 1.56	0.107 4.2	0.064 3.72	0.073 2.86	0.043 1.56	0.101 3.96	0.094 3.72	0.076 3	0.040 1.56
3+50	0.068 3.48	0.064 3.72	0.073 2.68	0.037 1.44	0.088 3.48	0.068 3.48	0.079 3.12	0.040 1.56	0.091 3.6	0.064 3.72	0.078 3	0.043 1.66	0.068 3.48	0.068 3.84	0.073 2.86	0.043 1.56	0.091 3.6	0.094 3.72	0.082 3.24	0.040 1.56
4+00	0.085 3.36	0.104 4.08	0.070 2.76	0.040 1.56	0.064 3.72	0.104 4.08	0.067 2.64	0.043 1.56	0.104 4.08	0.101 3.96	0.070 2.76	0.043 1.66	0.107 4.2	0.101 3.96	0.073 2.86	0.040 1.56	0.101 3.96	0.104 4.08	0.073 2.76	0.037 1.44
4+50	0.085 3.36	0.101 3.96	0.073 2.68	0.043 1.56	0.101 3.96	0.064 3.72	0.064 2.62	0.049 1.52	0.107 4.2	0.104 4.08	0.064 2.52	0.046 1.56	0.104 3.72	0.067 4.2	0.046 2.64	0.046 1.56	0.094 3.72	0.104 4.08	0.070 2.76	0.043 1.56
5+00	0.068 3.84	0.068 3.48	0.073 2.68	0.040 1.56	0.104 4.08	0.104 4.08	0.073 2.86	0.043 1.56	0.085 3.36	0.110 4.32	0.070 2.76	0.043 1.66	0.085 3.36	0.104 4.08	0.076 3	0.040 1.56	0.068 3.48	0.101 3.96	0.076 3	0.043 1.56
Avg	0.067 3.618	0.067 3.807	0.072 2.825	0.038 1.527	0.101 3.980	0.098 3.840	0.070 2.771	0.042 1.669	0.103 4.058	0.096 3.905	0.069 2.825	0.042 1.669	0.102 4.015	0.069 3.895	0.072 2.847	0.041 1.615	0.067 3.818	0.067 3.927	0.074 2.913	0.040 1.560
MIN	0.065 0.065	0.068 0.068	0.067 0.064	0.034 0.034	0.068 0.068	0.062 0.062	0.061 0.061	0.037 0.037	0.065 0.065	0.065 0.065	0.061 0.061	0.037 0.037	0.065 0.065	0.068 0.068	0.064 0.064	0.037 0.037	0.068 0.068	0.064 0.064	0.067 0.067	0.037 0.037
MAX	0.116 4.560	0.104 4.080	0.076 3.000	0.043 1.880	0.113 4.440	0.113 4.440	0.079 3.120	0.048 1.920	0.119 4.320	0.110 3.240	0.062 1.440	0.046 3.360	0.113 2.400	0.107 3.480	0.062 2.520	0.046 1.440	0.106 3.480	0.104 3.720	0.104 2.940	0.062 1.440
STD DEV	0.026 0.327	0.026 0.198	0.003 0.107	0.003 0.128	0.067 0.261	0.068 0.373	0.027 0.237	0.043 0.140	0.085 0.331	0.110 0.268	0.070 0.242	0.043 0.168	0.085 0.333	0.104 0.219	0.076 0.218	0.040 0.107	0.068 0.152	0.101 0.148	0.074 0.154	0.040 0.072

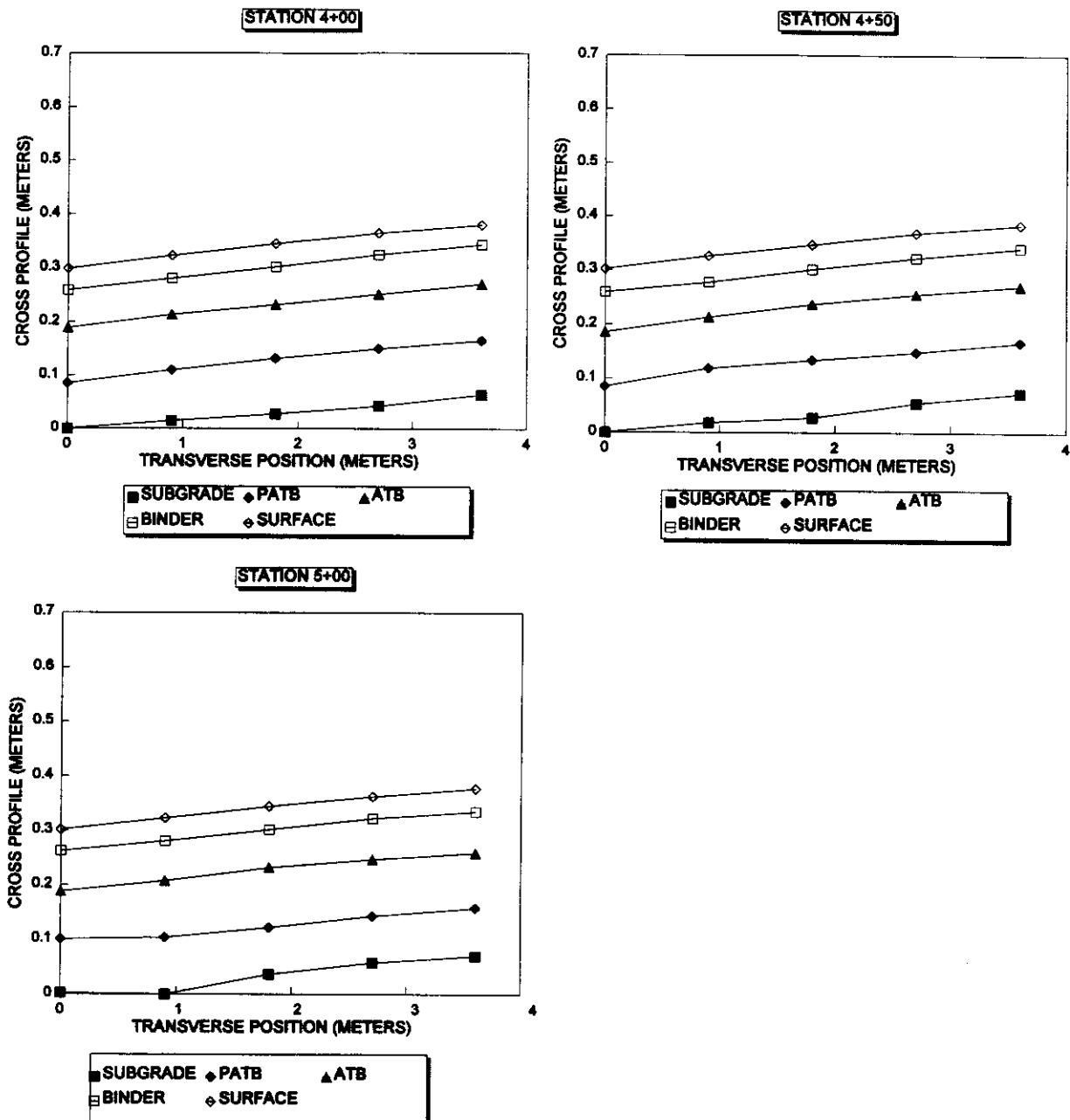
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SECTION 050122



SECTION 050122

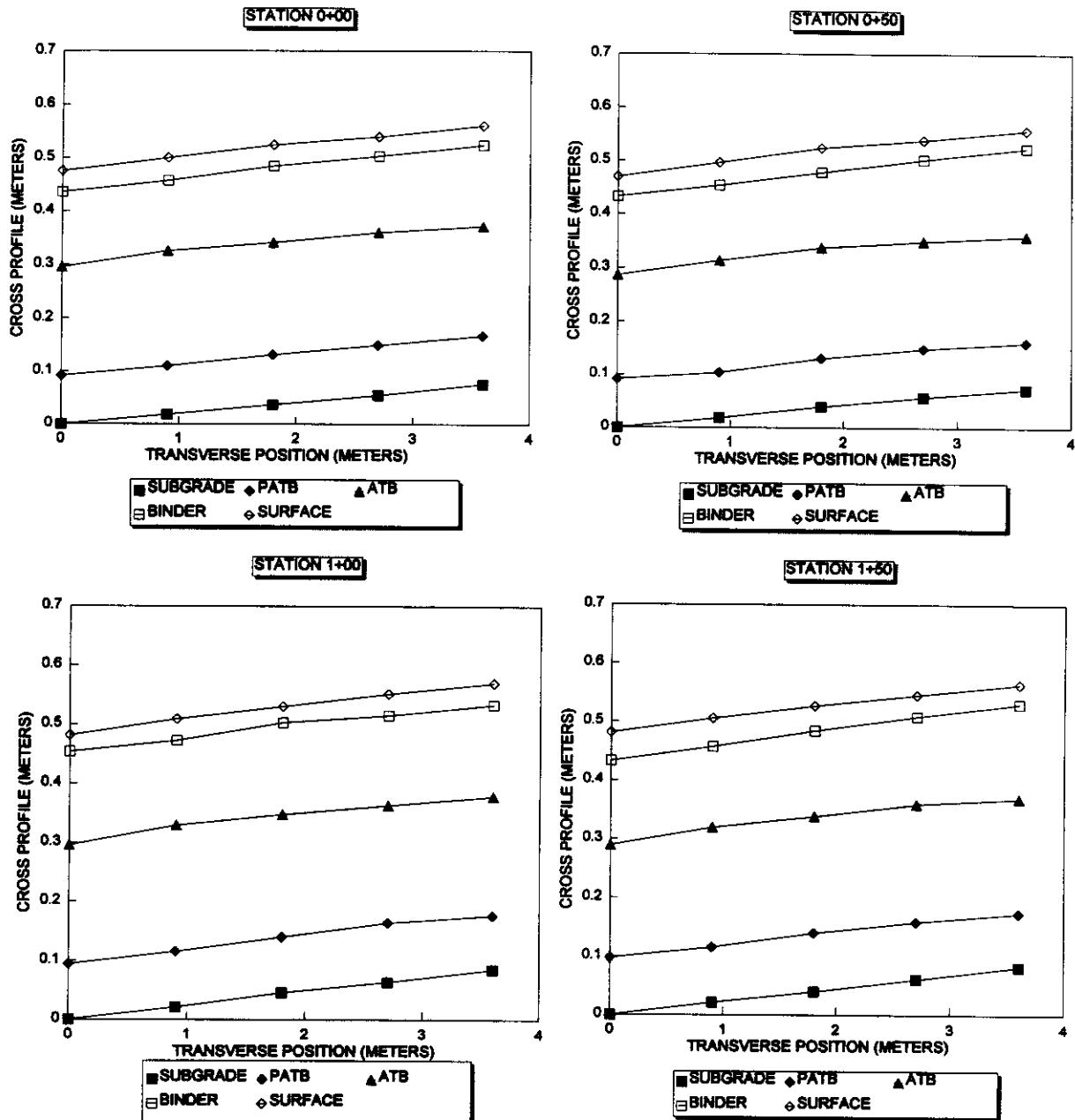


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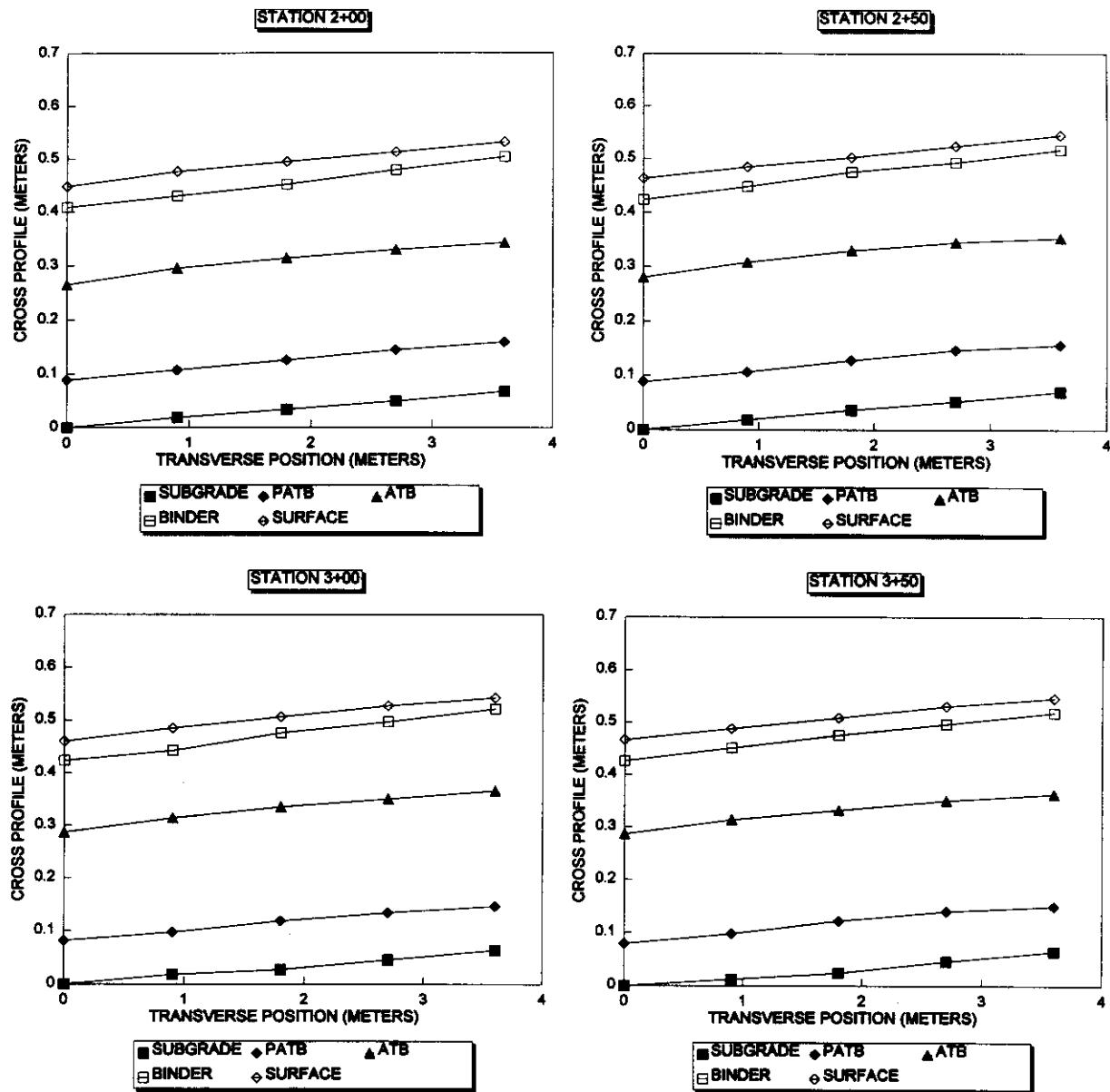
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0+00	0.081	0.204	0.140	0.040	0.081	0.216	0.131	0.043	0.084	0.210	0.143	0.040	0.084	0.210	0.143	0.037	0.091	0.204	0.152	0.03	3.6	8.04	6	1.4
0+50	0.081	0.195	0.146	0.037	0.085	0.210	0.140	0.043	0.081	0.207	0.140	0.046	0.081	0.201	0.152	0.037	0.088	0.196	0.165	0.03	3.6	7.98	6.76	1.3
1+00	0.084	0.201	0.158	0.027	0.084	0.213	0.143	0.037	0.084	0.207	0.155	0.027	0.101	0.198	0.152	0.037	0.091	0.201	0.155	0.03	3.72	7.82	6.12	1.4
1+50	0.088	0.192	0.143	0.049	0.084	0.204	0.137	0.049	0.101	0.198	0.146	0.043	0.098	0.201	0.149	0.037	0.091	0.195	0.162	0.03	3.84	7.98	6.38	1.3
2+00	0.088	0.177	0.143	0.040	0.088	0.189	0.134	0.046	0.081	0.189	0.137	0.043	0.084	0.186	0.149	0.034	0.091	0.183	0.162	0.02	3.48	8.86	5.84	1.0
2+50	0.088	0.192	0.143	0.040	0.088	0.201	0.140	0.037	0.081	0.201	0.146	0.027	0.084	0.198	0.149	0.030	0.085	0.196	0.165	0.02	3.48	7.58	5.84	1.0
3+00	0.082	0.204	0.137	0.037	0.079	0.216	0.128	0.043	0.081	0.216	0.140	0.030	0.088	0.216	0.146	0.030	0.082	0.219	0.155	0.02	3.24	8.04	6.12	0.8
3+50	0.079	0.207	0.140	0.040	0.085	0.216	0.137	0.037	0.088	0.210	0.143	0.034	0.084	0.210	0.146	0.034	0.085	0.213	0.155	0.02	3.12	8.16	5.52	1.0
4+00	0.091	0.204	0.143	0.040	0.088	0.219	0.134	0.040	0.084	0.213	0.146	0.034	0.084	0.213	0.149	0.027	0.088	0.210	0.165	0.02	3.6	8.04	5.84	0.9
4+50	0.101	0.189	0.148	0.024	0.086	0.204	0.137	0.027	0.104	0.201	0.134	0.030	0.084	0.196	0.149	0.024	0.149	0.204	0.165	0.02	3.98	7.44	5.88	0.9
5+00	0.086	0.183	0.146	0.024	0.081	0.195	0.143	0.027	0.082	0.195	0.149	0.024	0.085	0.195	0.158	0.021	0.162	0.202	0.162	0.02	3.84	7.2	5.76	0.8
Avg	0.081	0.134	0.090	0.025	0.081	0.142	0.084	0.026	0.084	0.140	0.089	0.023	0.084	0.139	0.103	0.021	0.081	0.139	0.109	0.01	3.588	7.861	5.895	0.01
Min	0.079	0.094	0.063	0.001	0.002	0.005	0.003	0.001	0.002	0.005	0.003	0.001	0.002	0.005	0.135	0.387	7.985	5.891	1.244	3.480	7.973	6.251	1.12	
Max	0.101	0.207	0.158	0.049	0.098	0.219	0.143	0.049	0.104	0.216	0.155	0.048	0.101	0.216	0.156	0.037	0.091	0.219	0.165	0.03	3.120	6.980	5.400	0.84
Std Dev	0.008	0.080	0.068	0.017	0.041	0.095	0.083	0.018	0.043	0.083	0.088	0.017	0.043	0.083	0.088	0.015	0.062	0.073	0.073	0.01	0.242	0.571	0.213	0.21

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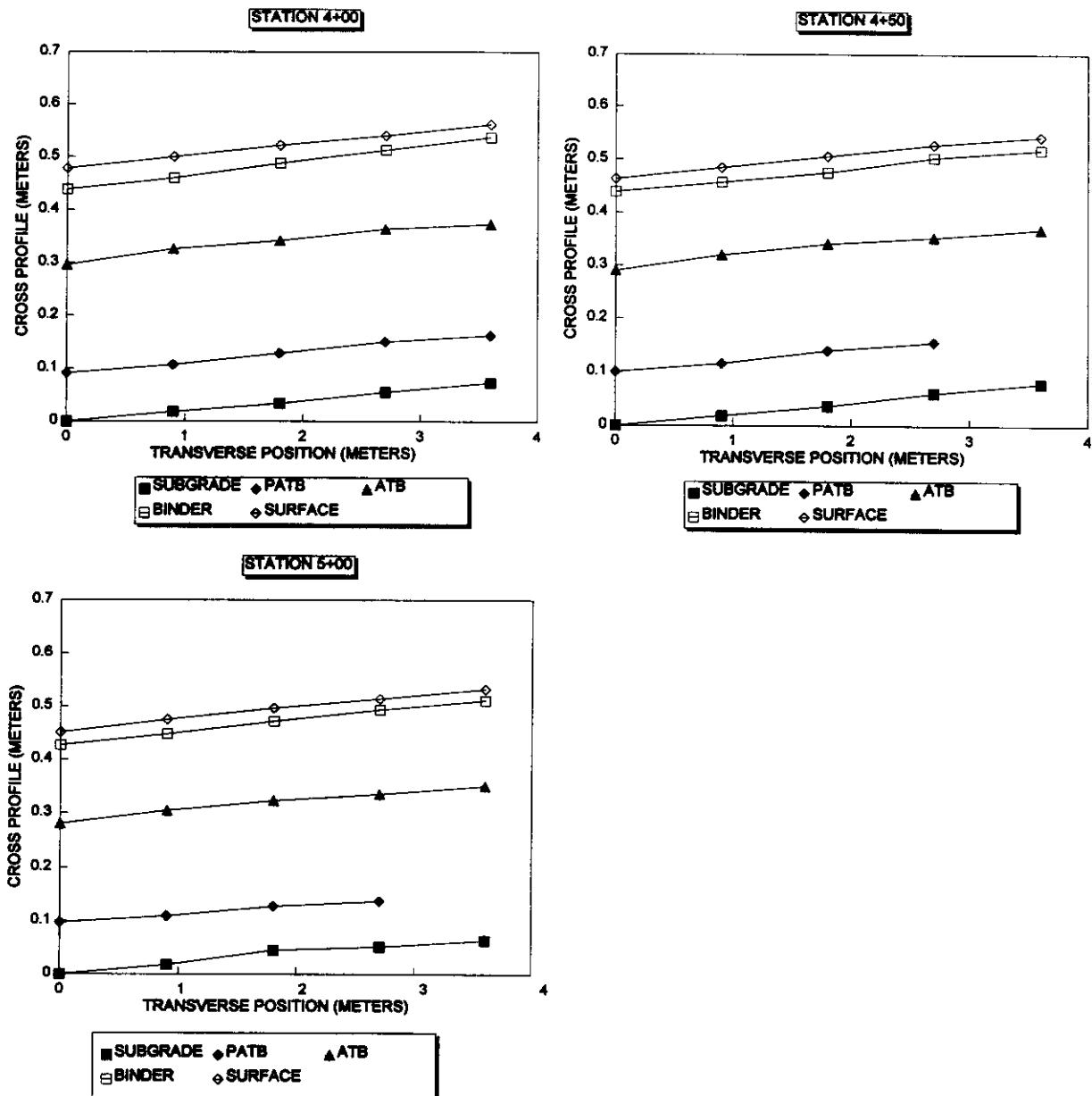
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SECTION 050123



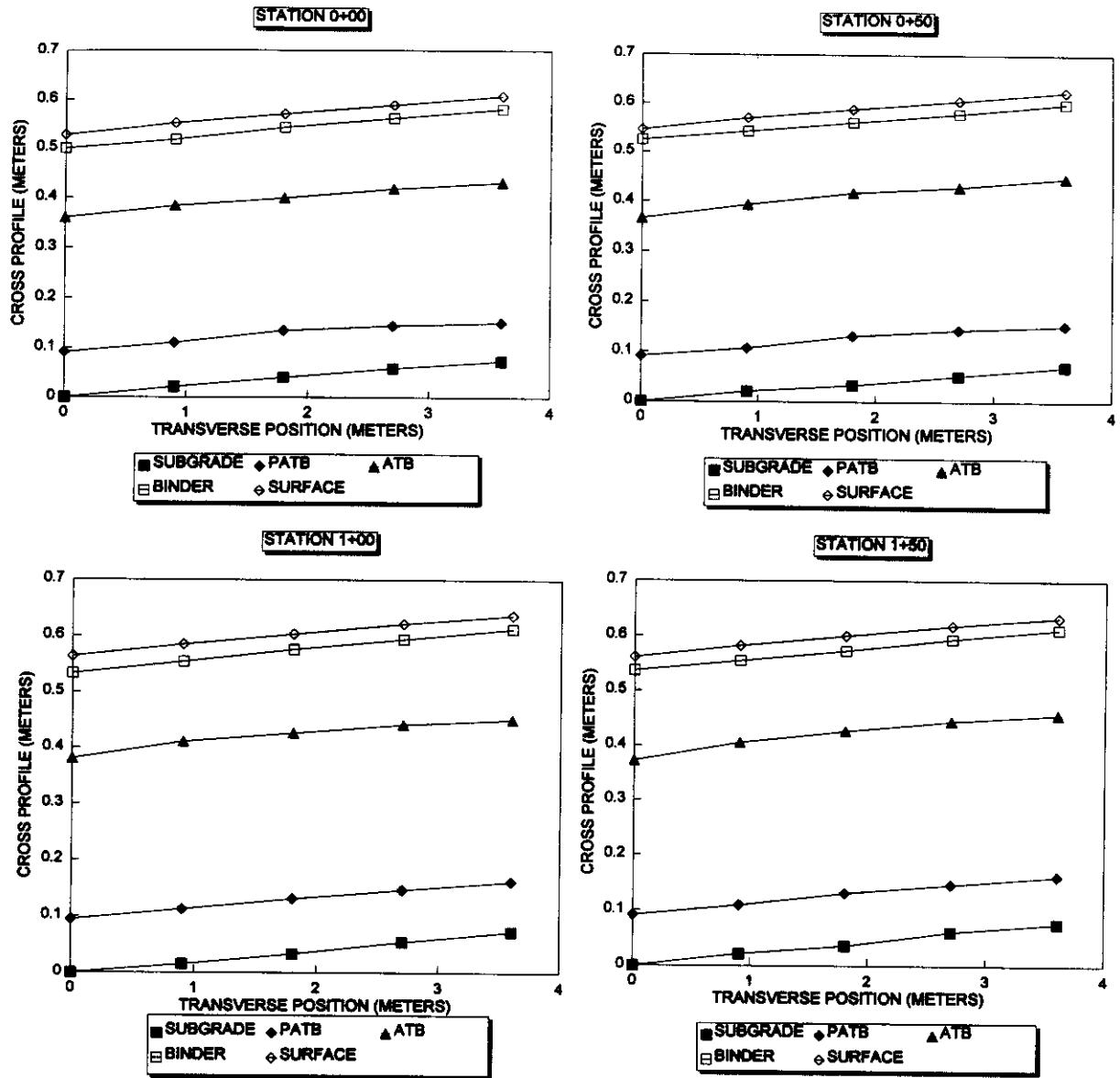
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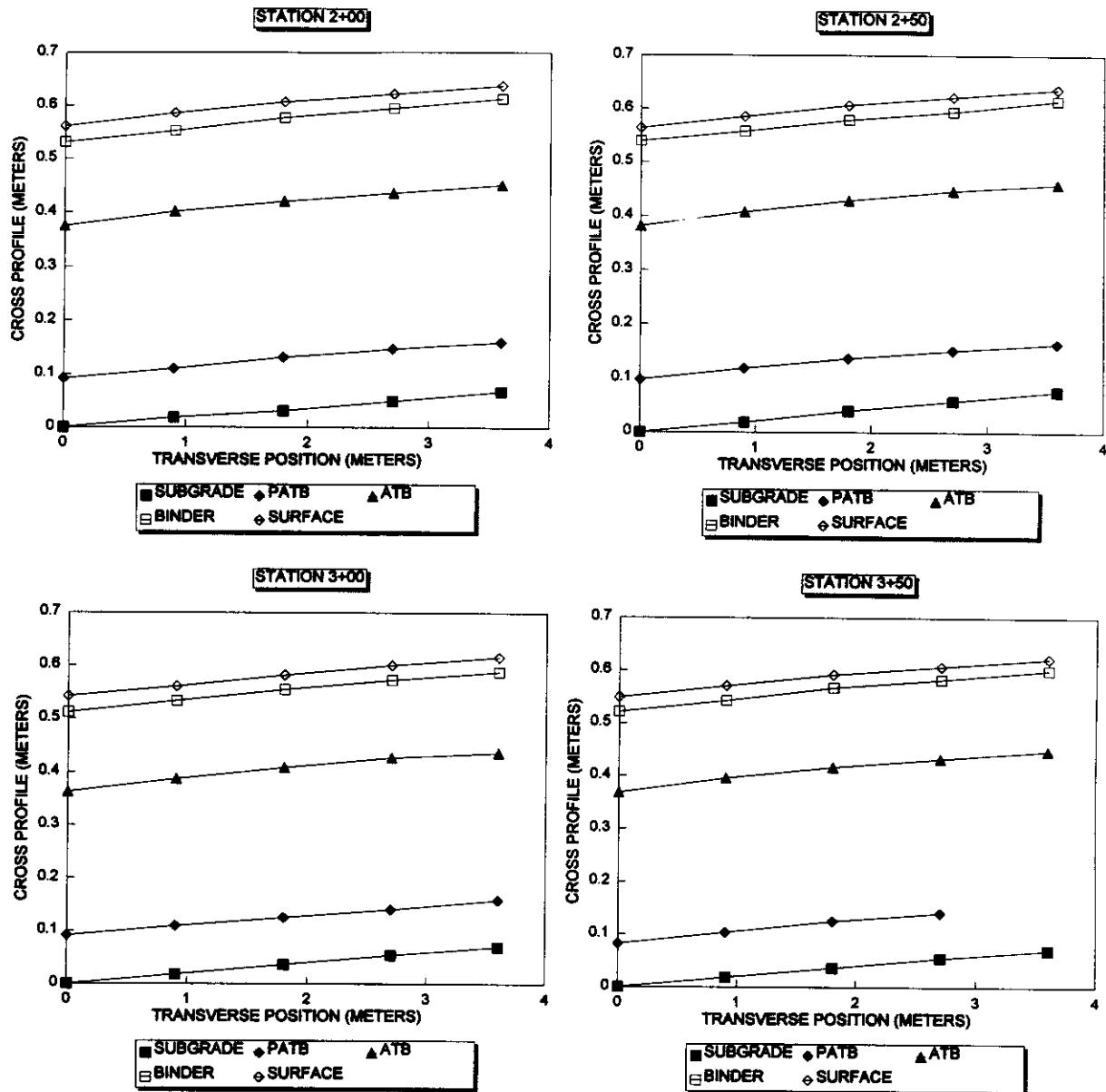
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Lane Offset	0.0M				0.4M				0.8M				1.2M				2.6M				3.0M				
	PATS Thickness (in) (mm)	ATB Thickness (in) (mm)	Binder Thickness (in) (mm)	Surface Thickness (in) (mm)																					
0+00	0.061 3.6	0.288 10.56	0.140 5.02	0.027 1.06	0.066 3.48	0.274 10.8	0.134 5.28	0.034 1.32	0.064 3.72	0.265 10.44	0.145 5.84	0.027 1.06	0.065 3.36	0.274 10.8	0.143 5.84	0.027 1.06	0.076 3	0.280 11.04	0.149 5.86	0.027 1.06	0.076 3	0.280 11.04	0.149 5.86	0.027 1.06	
0+50	0.061 3.6	0.274 10.8	0.158 6.24	0.021 0.84	0.065 3.36	0.287 11.28	0.149 5.88	0.027 1.06	0.066 3.84	0.287 11.28	0.143 5.84	0.027 1.06	0.061 3.6	0.287 11.28	0.149 5.88	0.027 1.06	0.062 3.24	0.296 11.84	0.152 6	0.027 1.08	0.062 3.24	0.296 11.84	0.152 6	0.024 0.96	
1+00	0.064 3.72	0.287 11.28	0.152 6	0.030 1.2	0.066 3.84	0.290 11.76	0.143 5.84	0.030 1.2	0.066 3.84	0.290 11.64	0.148 5.88	0.027 1.06	0.061 3.6	0.296 11.64	0.162 6	0.027 1.06	0.068 3.48	0.290 11.4	0.162 6	0.024 0.96	0.068 3.48	0.290 11.4	0.162 6	0.024 0.96	
1+50	0.061 3.6	0.280 11.04	0.165 6.48	0.024 0.96	0.066 3.48	0.296 11.04	0.149 5.88	0.027 1.06	0.064 3.72	0.296 11.04	0.146 5.76	0.027 1.06	0.065 3.36	0.296 11.76	0.149 5.88	0.024 0.96	0.065 3.36	0.296 11.84	0.155 6.12	0.021 0.84	0.065 3.36	0.296 11.84	0.155 6.12	0.021 0.84	
2+00	0.061 3.6	0.263 11.16	0.165 6.12	0.030 1.2	0.061 3.8	0.293 11.82	0.149 5.88	0.034 1.32	0.101 3.96	0.290 11.4	0.165 6.12	0.030 1.2	0.098 3.84	0.290 11.4	0.158 6.24	0.027 1.06	0.061 3.6	0.293 11.32	0.162 6	0.024 0.96	0.061 3.6	0.293 11.32	0.162 6	0.024 0.96	
2+50	0.066 3.84	0.283 11.18	0.158 6.24	0.024 0.96	0.101 3.96	0.290 11.4	0.149 5.88	0.027 1.06	0.096 3.84	0.293 11.52	0.149 5.88	0.027 1.06	0.094 3.72	0.296 11.84	0.146 5.76	0.027 1.06	0.088 3.48	0.296 11.84	0.155 6.12	0.021 0.84	0.088 3.48	0.296 11.84	0.155 6.12	0.021 0.84	
3+00	0.061 3.6	0.271 10.88	0.149 5.88	0.030 1.2	0.061 3.8	0.277 10.82	0.146 5.76	0.027 1.06	0.066 3.48	0.283 11.18	0.146 5.76	0.027 1.06	0.065 3.36	0.287 11.28	0.146 5.76	0.027 1.06	0.068 3.48	0.277 10.82	0.152 6	0.027 1.08	0.068 3.48	0.277 10.82	0.152 6	0.027 1.08	
3+50	0.062 3.24	0.287 11.28	0.152 6	0.027 1.06	0.065 3.96	0.283 11.52	0.148 5.76	0.027 1.06	0.066 3.48	0.283 11.52	0.149 5.88	0.024 0.96	0.085 3.36	0.293 11.52	0.149 5.88	0.024 0.96	0.152 6	0.021 0.84	0.152 6	0.021 0.84	0.152 6	0.021 0.84	0.152 6	0.021 0.84	
4+00	0.061 3.6	0.265 10.44	0.162 6.36	0.016 0.72	0.061 3.6	0.280 11.04	0.146 5.76	0.027 1.06	0.064 3.72	0.280 11.04	0.149 5.88	0.024 0.96	0.091 3.6	0.280 11.04	0.152 6	0.024 0.96	0.158 6.24	0.021 0.84	0.158 6.24	0.021 0.84	0.158 6.24	0.021 0.84	0.158 6.24	0.021 0.84	
4+50	0.061 3.6	0.266 10.58	0.165 6.12	0.027 1.06	0.061 3.6	0.280 11.04	0.146 5.76	0.027 1.06	0.068 3.48	0.283 11.16	0.152 6	0.024 0.96	0.086 3.48	0.267 11.28	0.152 6	0.024 0.96	0.158 6.24	0.021 0.84	0.158 6.24	0.021 0.84	0.158 6.24	0.021 0.84	0.158 6.24	0.021 0.84	
5+00	0.061 3.6	0.262 10.32	0.155 6.12	0.027 1.06	0.064 3.72	0.271 10.88	0.146 5.76	0.030 1.2	0.101 3.96	0.271 10.88	0.148 5.88	0.030 1.2	0.103 3.96	0.268 10.58	0.152 6	0.027 1.06	0.158 6.24	0.024 0.84	0.158 6.24	0.024 0.84	0.158 6.24	0.024 0.84	0.158 6.24	0.024 0.84	
AVG	0.061 3.800	0.275 10.844	0.155 6.000	0.026 1.036	0.061 3.800	0.285 11.236	0.146 5.749	0.028 1.145	0.065 3.731	0.285 11.225	0.149 5.847	0.027 1.086	0.065 3.587	0.287 11.291	0.150 5.913	0.026 1.036	0.086 3.377	0.290 11.400	0.152 6.142	0.024 0.927	0.086 3.377	0.290 11.400	0.152 6.142	0.024 0.927	
MIN	0.062 0.262	0.140 0.140	0.018 0.065	0.018 0.065	0.027 0.271	0.134 0.134	0.027 0.145	0.066 0.143	0.285 0.285	0.143 0.143	0.024 0.024	0.065 0.065	0.288 0.380	0.143 0.143	0.024 0.024	0.076 0.076	0.277 0.277	0.143 0.143	0.024 0.024	0.076 0.076	0.277 0.277	0.143 0.143	0.024 0.024		
MAX	0.066 3.240	0.267 10.320	0.165 5.820	0.027 0.720	0.060 3.360	0.290 10.880	0.149 5.280	0.026 1.080	0.060 3.480	0.280 10.440	0.160 5.640	0.026 0.980	0.060 3.380	0.280 10.580	0.160 5.640	0.026 0.980	0.060 3.000	0.280 10.920	0.162 5.880	0.024 0.840	0.060 3.000	0.280 10.920	0.162 5.880	0.024 0.840	
STD DEV	0.003 0.135	0.006 0.337	0.008 0.244	0.004 0.147	0.005 0.177	0.006 0.344	0.004 0.165	0.004 0.094	0.002 0.173	0.004 0.370	0.006 0.136	0.006 0.090	0.005 0.198	0.005 0.352	0.006 0.154	0.006 0.098	0.005 0.098	0.005 0.188	0.006 0.280	0.006 0.152	0.006 0.090	0.005 0.090	0.005 0.090	0.005 0.090	0.005 0.090

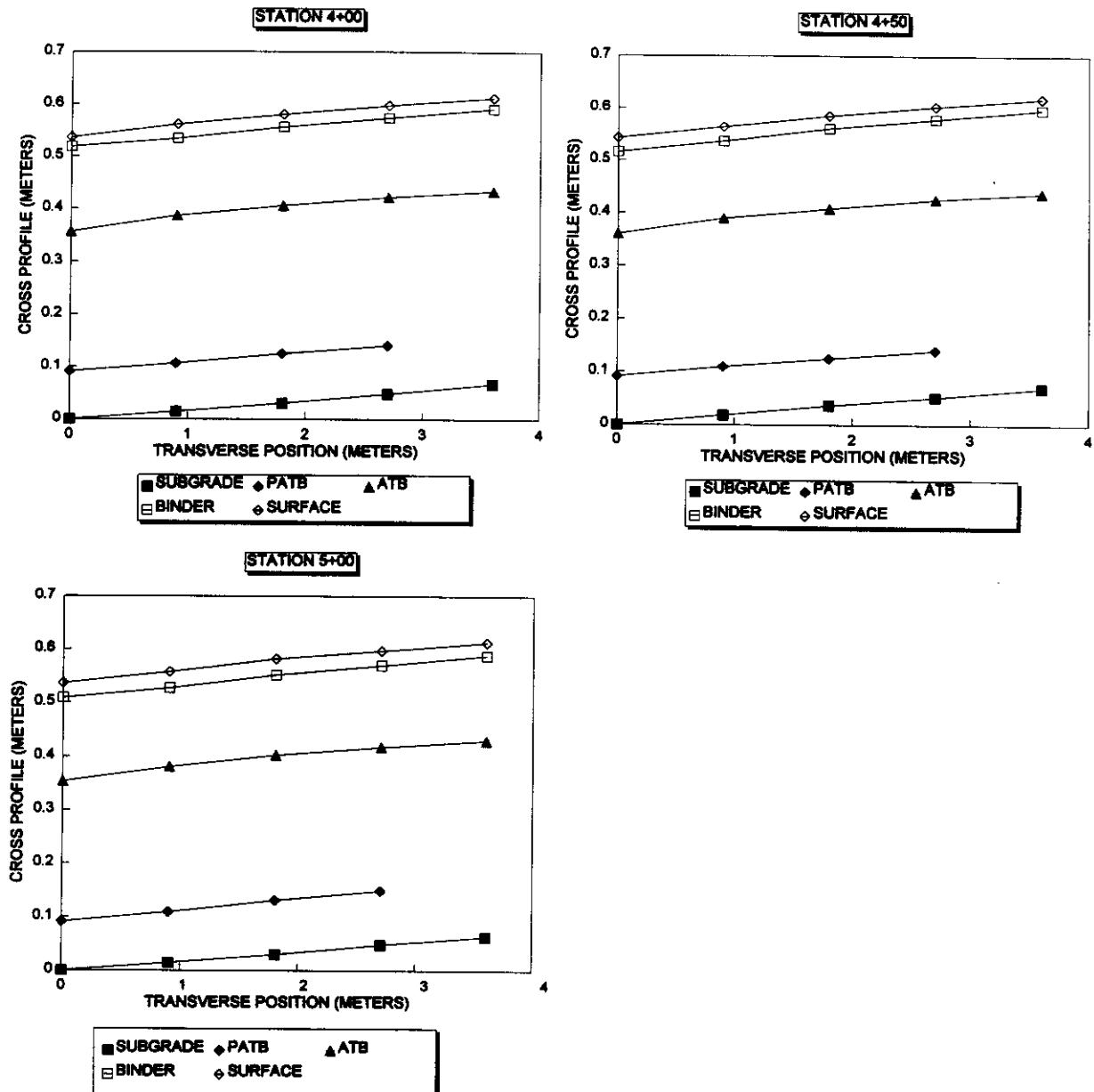
SECTION 050124



SECTION 050124



SECTION 050124



APPENDIX C

MATERIAL SAMPLING AND FIELD TESTING PLAN

Brent Rauhut Engineering Inc.



January 19, 1993

Mr. William Staggs
Pavement Management Engineer
Arkansas State Highway &
Transportation Department
P.O. Box 2261
Little Rock, Arkansas 72203

Subject: Arkansas SPS-1 (050100) Materials Sampling and Field Testing Plan.

Dear Bill,

Please find enclosed a revised plan for materials sampling and field testing activities for the Arkansas SPS-1 project, located on US-63 in the northbound lane, in Craighead County, Arkansas. This plan details the material sampling, field testing, and laboratory materials testing to occur as part of the SPS-1 project construction. Please review this document thoroughly to ensure that it meets with the requirements of the planned construction and is acceptable to the Arkansas Highway and Transportation Department. If you have any questions or comments regarding the information provided in this plan, please do not hesitate to call me. A copy of this document is also being provided to Mr. Monte Symons of the FHWA, for review and approval.

I hope this transmittal provides you with the information that you need to proceed with the SPS-1 activities in Arkansas. As always, if you need any assistance, please do not hesitate to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark P. Gardner".

Mark P. Gardner, P.E.
Project Engineer, SRCO

MPG:dmj

Enclosure: As stated.

cc.w/Enc: Monte Symons, FHWA/LTPP-DC
Homer G. Wheeler, RE-SRCO
Shiraz Tayabji, PCS/Law

MATERIAL SAMPLING AND FIELD TESTING PLAN

**ARKANSAS SPS-1 PROJECT 050100
US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

PREPARED BY:

**BRENT RAUHUT ENGINEERING INC.
SHRP SOUTHERN REGION COORDINATION OFFICE
8240 MOPAC, SUITE 220
AUSTIN, TEXAS 78759**

JANUARY 1993

ARKANSAS SPS-1 PROJECT 050100
MATERIALS SAMPLING AND FIELD TESTING PLAN

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**MATERIALS SAMPLING AND TESTING PLAN
ARKANSAS SPS-1, US-63 NBL
CRAIGHEAD COUNTY, ARKANSAS**

INTRODUCTION

As part of their participation in the SHRP/FHWA long term pavement performance studies, the State of Arkansas has elected to construct an SPS-1 project to study the structural factors for flexible pavements. This project will consist of multiple test sections with similar details and materials along the stretch of U.S. Highway 63, in the northbound lane, in Craighead County, Arkansas. It is the intent of this document to provide a plan for the materials sampling and field testing, and a listing of the laboratory materials testing that will occur as a part of this project.

This document has been prepared in accordance with the guidelines provided by the Strategic Highway Research Program in operational memorandum #SHRP-LTPP-OM-021, entitled "Specific Pavement Studies Materials Sampling and Testing Requirements for Experiment SPS-1, Strategic Study of Structural Factors for Flexible Pavements, February 1991". Recognizing the apparent variability in the construction of roadway projects, the goal of this effort is to develop a sampling and testing plan for the project materials that will be consistent with other projects in this experiment, and therefore make the information obtained suitable for analysis.

The objective of the SPS-1 study is to more precisely determine the relative influence of strategic factors on the performance of flexible pavements. The factors addressed in this study include drainage, base type and thickness, and asphalt surface thickness. Arkansas' involvement in the study will provide critical information in the wet, no freeze environmental zone, on a coarse grained subgrade soil. The data produced by this experiment will be used to evaluate existing design methods and performance equations. The interaction of the factors previously discussed will be determined in combination with the effect of environmental region and soil type. The effects of these factors will be studied under realistic performance conditions with significant materials and construction control. Herein lies the need for a sampling testing plan, provided in the following pages.

This sampling and testing plan has been developed by Brent Rauhut Engineering Inc., the Southern Region Coordination Office, under contract to the Federal Highway Administration. If, during the construction activities, any questions arise regarding the sampling and/or testing to be conducted, one should first coordinate these questions with the Arkansas Highway and Transportation Department, who may refer them to the Southern Region Coordination Office.

This document contains numerous tables and figures which summarize the sampling and testing activities to occur in the Arkansas SPS-1 project. In general, the tests and test locations are identified by test section number, beginning with 050113, and ending with 050124. The numbers are not in consecutive order along the roadway. Figures 1, 2, and 3 and Tables 1 and 2 pertain to the layout of the test sections.

Tables 3, 4, 5, and 6 outline the scope of field testing and laboratory materials testing activities. Figures 4-21 are provided to establish the sampling locations for each test section.

Tables 7, 8, 9, 10, and 11 itemize the field sampling and testing activities to occur on the subgrade, dense graded aggregate base (DGAB), permeable asphalt treated base (PATB), asphalt treated base (ATB), and AC surface materials, respectively.

**TABLE 1. PROPOSED TEST SECTION LAYOUT
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

Section (Cell ID)	Cross Section	Begin Station	End Station
050119 (Q19)	7" AC Surface	835 + 50	841 + 50
	4" PATB		
	4" DGAB		
050120 (Q20)	4" AC Surface	845 + 50	851 + 50
	4" PATB		
	8" DGAB		
050121 (Q21)	4" AC Surface	853 + 50	859 + 50
	4" PATB		
	12" DGAB		
050122 (Q22)	4" AC Surface	864 + 00	870 + 00
	4" ATB		
	4" PATB		
050123 (Q23)	7" AC Surface	875 + 50	881 + 50
	8" ATB		
	4" PATB		
050124 (Q24)	7" AC Surface	882 + 50	888 + 50
	12" ATB		
	4" PATB		

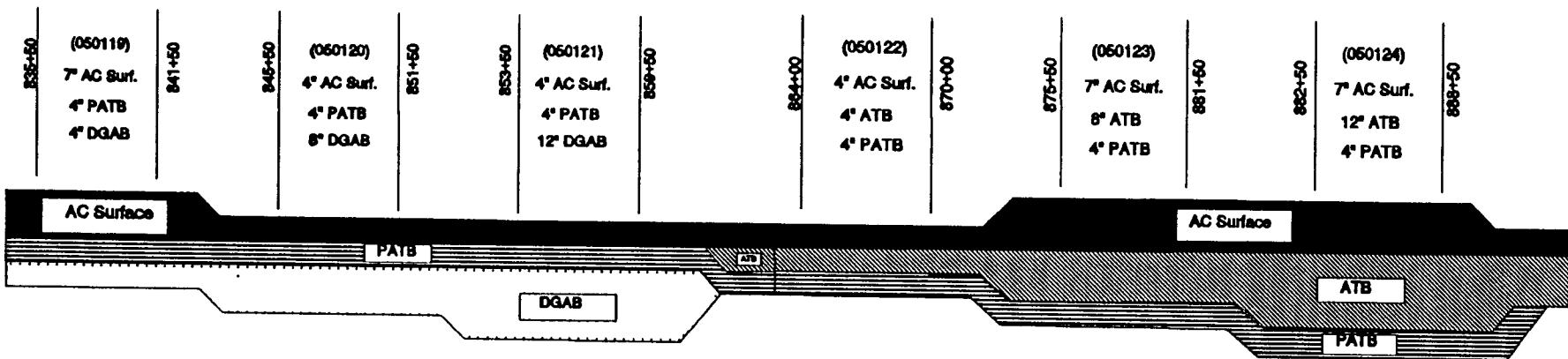
TABLE 1. PROPOSED TEST SECTION LAYOUT
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Section (Cell ID)	Cross Section	Begin Station	End Station
050118 (Q18)	4" AC Surface	892 + 50	898 + 50
	8" ATB		
	4" DGAB		
050116 (Q16)	4" AC Surface	902 + 00	908 + 00
	12" ATB		
050115 (Q15)	7" AC Surface	912 + 00	918 + 00
	8" ATB		
050117 (Q17)	7" AC Surface	919 + 00	925 + 00
	4" ATB		
	4" DGAB		
050114 (Q14)	7" AC Surface	928 + 00	934 + 00
	12" DGAB		
050113 (Q13)	4" AC Surface	938 + 00	944 + 00
	8" DGAB		

**TABLE 2. ORDERING OF SECTIONS ALONG CENTER LINE STATIONING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

Begin Sta.	End Sta.	Section ID	Thickness (In.)			
			AC Surface	ATB	PATB	DGAB
835+50	841+50	050119	7	0	4	4
841+50	845+50	Transition	7-4	0	4	4-8
845+50	851+50	050120	4	0	4	8
851+50	853+50	Transition	4	0	4	8-12
853+50	859+50	050121	4	0	4	12
859+50	864+00	Transition	4	0-4	4	12-0
864+00	870+00	050122	4	4	4	0
870+00	875+50	Transition	4-7	4-8	4	0
875+50	881+50	050123	7	8	4	0
881+50	882+50	Transition	7	8-12	4	0
882+50	888+50	050124	7	12	4	0
888+50	892+50	Transition	7-4	12-8	4-0	0-4
892+50	898+50	050118	4	8	0	4
898+50	902+00	Transition	4	8-12	0	4-0
902+00	908+00	050116	4	12	0	0
908+00	912+00	Transition	4-7	12-8	0	0
912+00	918+00	050115	7	8	0	0
918+00	919+00	Transition	7	8-4	0	0-4
919+00	925+00	050117	7	4	0	4
925+00	928+00	Transition	7	4-0	0	4-12
928+00	934+00	050114	7	0	0	12
934+00	938+00	Transition	7-4	0	0	12-8
938+00	944+00	050113	4	0	0	8

Figure 1. LAYOUT OF TEST SECTIONS ARKANSAS SPS-1, US-63 NBL Craighead County, Arkansas



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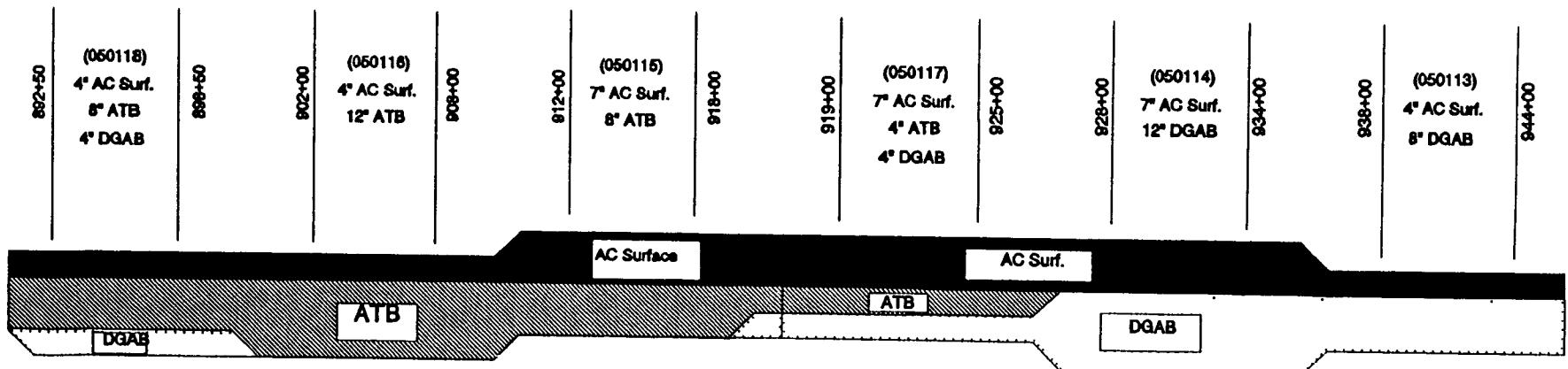


Figure 2. LAYOUT OF TEST SECTIONS WITH DRAINAGE
ARKANSAS SPS-1, US-63 NBL
Craighead County, Arkansas

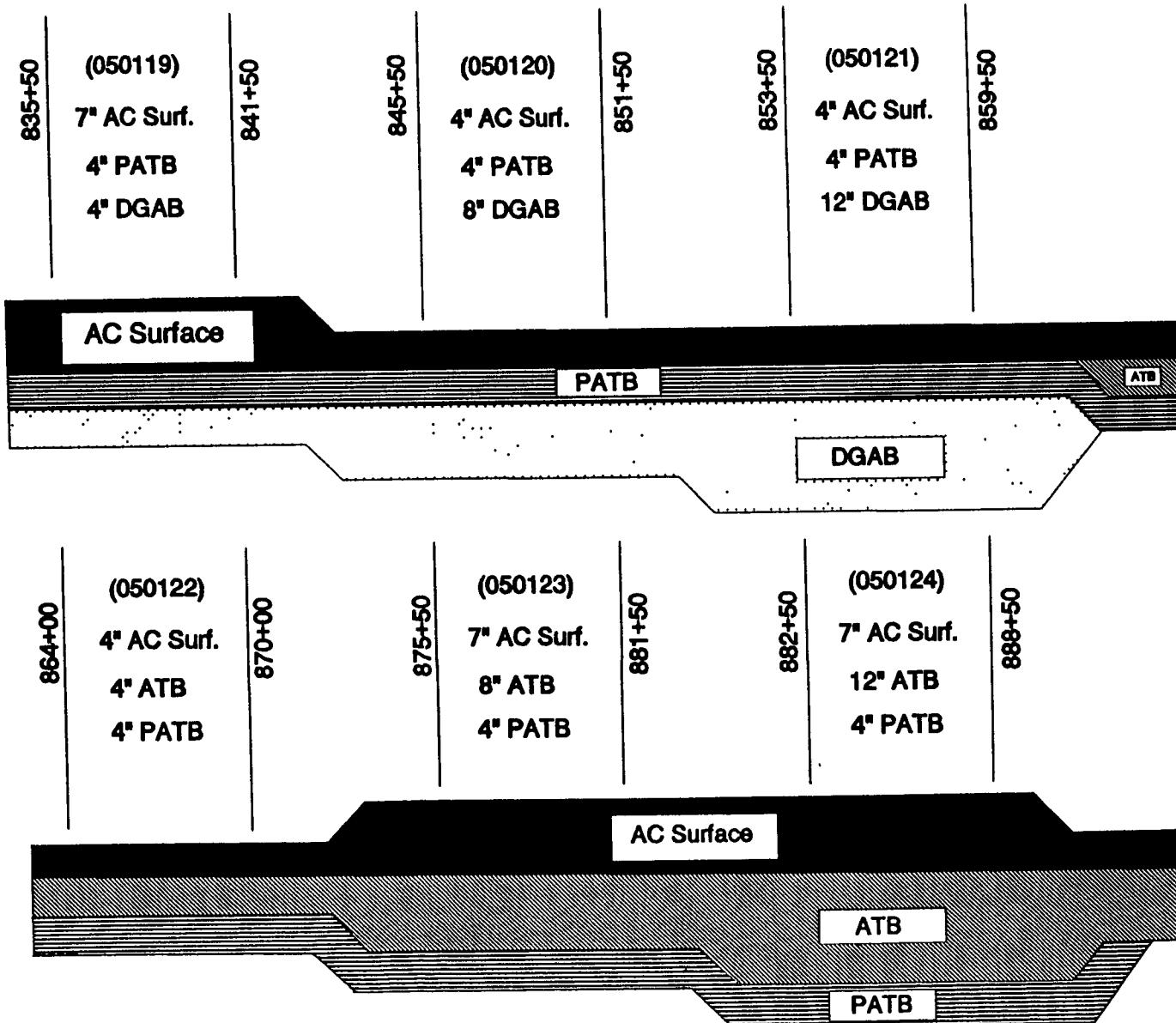


Figure 3. LAYOUT OF TEST SECTIONS WITHOUT DRAINAGE

ARKANSAS SPS-1, US-63 NBL

Craighead County, Arkansas

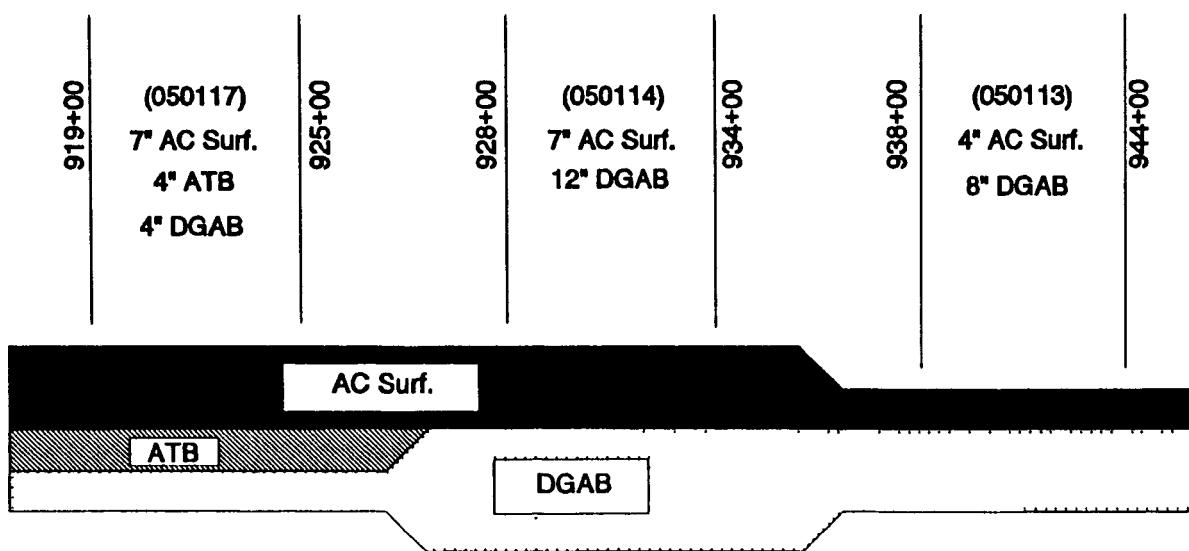
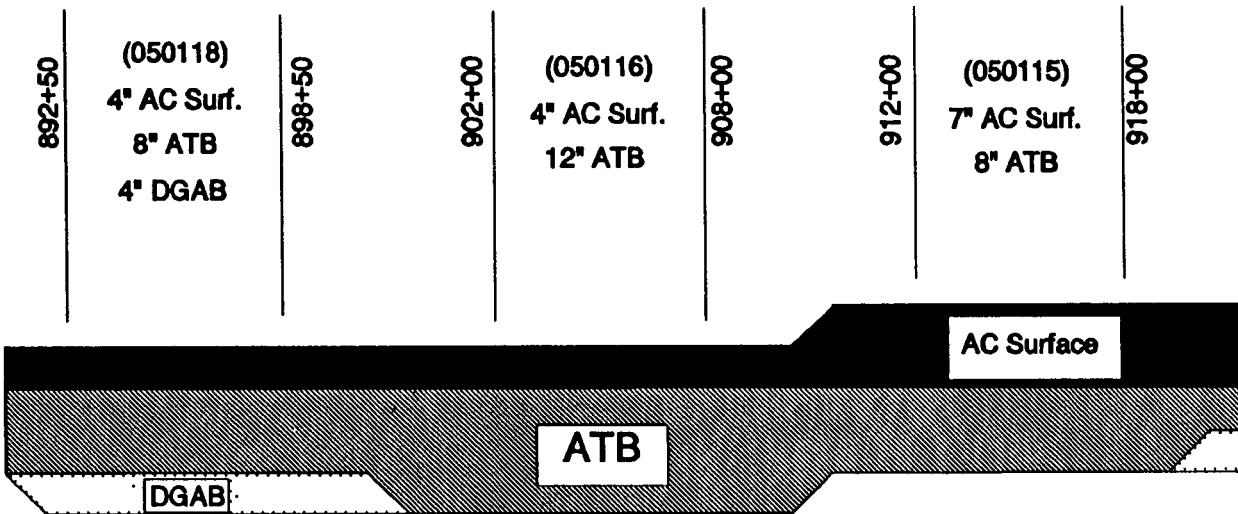


TABLE 3. SCOPE OF MATERIALS SAMPLING

Material And Sample Description	Number Of Samples	Sample Location
Asphalt Concrete Coring - 4" Diam. Cores Bulk Sampling (100 Lbs. of Each Mix, Uncompacted)	60 3	C1-C60 BA-20, BA-21, BA-22 - From Plant
Unbound Base/Subbase Layers (Per Layer) Bulk Sampling Moisture Content Samples	3 3	B7-B9 B7-B9
Asphalt Treated Base Coring - 4" Diam. Cores Bulk Sampling (100 Lbs. Per Sample, Uncompacted)	34 3	C17-C50 BT-20, BT-21, BT-22 - From Plant
Permeable Asphalt Treated Base Coring - 4" Diam. Cores Bulk Sampling (100 Lbs. Per Sample, Uncompacted)	30 3	C1-C30 BT-01, BT-02, BT-03 - From Plant
Subgrade Splitspoon Sampling Thin-Walled Tube Sampling (* 2 Tubes or 2 Spoons or Combination Per Hole) Bulk Sampling (400 Lbs. Each Sample) Moisture Content Samples Permeability	36* 36* 6 24 6	A1-A18 A1-A18 B1-B6 A1-A18, B1-B6 A3, A9, A18
Shoulder Auger Probes (Depth to Rigid Layer-20' Max.)	12	S1-S12
Asphalt Cement (5 gallons each sample)	3	BC-01, BC-02, BC-03 - From Plant

NOTE: If different AC mixes are used for the surface course and binder course, bulk samples should be obtained from each mix.

**TABLE 5. FIELD AND LABORATORY MATERIALS TESTING PLAN
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

Material And Test Description	SHRP Des.	SHRP Protocol	Nº. Of Tests	Sample Location
<u>Subgrade</u>				
Sieve Analysis	SS01	P51	6	B1-B6
Hydrometer to 0.01mm	SS02	P42	6	B1-B6
Atterberg Limits	SS03	P43	6	B1-B6
Classification	SS04	P52	24	B1-B6, A1-A18 --- Note 1
Moisture-Density Relations	SS05	P55	6	B1-B6
Resilient Modulus (At In-Situ Density and Moisture)	SS07	P46	6	A2, A5, A8, A11, A14, A17
Unit Weight	SS08	P56	6	B1-B6
Natural Moisture Content	SS09	P49	6	B1-B6
Unconfined Comp. Strength	SS10	P54	6	A1, A4, A7, A10, A13, A16
In-Place Density		SHRP-LTPP Method	42	T1-T36, B1-B6
Depth to Rigid Layer		SHRP-LTPP Method	12	S1-S12
Permeability	SS11	P57	3	A3, A9, A18
<u>Unbound Granular Base</u>				
Particle Size Analysis	UG01	P41	3	B7, B8, B9
Sieve Analysis (Washed)	UG02	P41	3	B7, B8, B9
Atterberg Limits	UG04	P43	3	B7, B8, B9
Moisture-Density Relations	UG05	P44	3	B7, B8, B9
Resilient Modulus (At In-Situ Density and Moisture)	UG07	P46	3	B7, B8, B9
Classification	UG08	P47	3	B7, B8, B9
Permeability	UG09	P48	3	B7, B8, B9
Natural Moisture Content	UG10	P49	3	B7, B8, B9
In-Place Density and Moisture		SHRP-LTPP Method	21	T37-T57

TABLE 5. FIELD AND LABORATORY MATERIALS TESTING PLAN
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Material And Test Description	SHRP Des.	SHRP Protocol	No. Of Tests	Sample Location
Permeable Treated Asphalt Base				
Core Examination/Thickness	AC01	P01	30	C1-C30
Bulk Specific Gravity	AC02	P02	12	C3, C4, C11-14, C17, C18, C21, C22, C29, C30
Maximum Specific Gravity	AC03	P03	3	BT-01, BT-02, BT-03 - From Plant
Asphalt Content (Extraction)	AC04	P04	3	BT-01, BT-02, BT-03 - From Plant
Moisture Susceptibility	AC05	P05	3	BT-01, BT-02, BT-03 - From Plant
Permeability/Flow	AC08	P08	1	BT-02 --- Note 2
Resilient Modulus	AC09	P09	2	C7-C9, C25-C27 --- Note 3
Tensile Strength	AC09	P09	8	C7-C10, C25-C28
Extracted Aggregate - Specific Gravity:				
Coarse Aggregate	AG01	P11	3	BT-01, BT-02, BT-03
Fine Aggregate	AG02	P12	3	BT-01, BT-02, BT-03
Type and Classification:				
Coarse Aggregate	AG03	P13	3	BT-01, BT-02, BT-03
Fine Aggregate	AG03	P13	3	BT-01, BT-02, BT-03
Gradation of Aggregate	AG04	P14	3	BT-01, BT-02, BT-03
NAA Test for Fine Aggregate	AG05	P14A	3	BT-01, BT-02, BT-03
Particle Shape				
Coarse Aggregate Shape	AG06	P14B	3	BT-01, BT-02, BT-03
Asphalt Cement -				
Abson Recovery	AE01	P21	3	BT-01, BT-02, BT-03
Penetration at 50F, 77F, 90F	AE02	P22	3	BT-01, BT-02, BT-03
Specific Gravity (60F)	AE03	P23	3	BT-01, BT-02, BT-03
Viscosity at 77F	AE04	P24	3	BT-01, BT-02, BT-03
Viscosity at 140F, 275F	AE05	P25	3	BT-01, BT-02, BT-03

TABLE 5. FIELD AND LABORATORY MATERIALS TESTING PLAN
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Material And Test Description	SHRP Des.	SHRP Protocol	Nº Of Tests	Sample Location
<u>Asphalt Treated Base</u>				
Core Examination/Thickness	AC01	P01	34	C17-C50
Bulk Specific Gravity	AC02	P02	34	C17-C50
Maximum Specific Gravity	AC03	P03	3	BT-20, BT-21, BT-22
Asphalt Content (Extraction)	AC04	P04	3	BT-20, BT-21, BT-22
Moisture Susceptibility	AC05	P05	1	BT-21
Resilient Modulus	AC07	P07	3	C25-C27, C31-C33, C45-C47
Tensile Strength	AC07	P07	12	C25-C28, C31-C34, C45-C48
In-Place Density		SHRP-LTPP Method	35	T58-T78, SA7-SA20
<u>Extracted Aggregate - Specific Gravity:</u>				
Coarse Aggregate	AG01	P11	3	BT-20, BT-21, BT-22
Fine Aggregate	AG02	P12	3	BT-20, BT-21, BT-22
<u>Type and Classification:</u>				
Coarse Aggregate	AG03	P13	3	BT-20, BT-21, BT-22
Fine Aggregate	AG03	P13	3	BT-20, BT-21, BT-22
Gradation of Aggregate	AG04	P14	3	BT-20, BT-21, BT-22
NAA Test for Fine Aggregate	AG05	P14A	3	BT-20, BT-21, BT-22
Particle Shape				
Coarse Aggregate Shape	AG06	P14B	3	BT-20, BT-21, BT-22
<u>Asphalt Cement -</u>				
Abson Recovery	AE01	P21	3	BT-20, BT-21, BT-22
Penetration at 50F, 77F, 90F	AE02	P22	3	BT-20, BT-21, BT-22
Specific Gravity (60F)	AE03	P23	3	BT-20, BT-21, BT-22
Viscosity at 77F	AE04	P24	3	BT-20, BT-21, BT-22
Viscosity at 140F, 275F	AE05	P25	3	BT-20, BT-21, BT-22

**TABLE 4. SCOPE OF FIELD TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

Material And Test Description	Number Of Tests	Test Location
Asphalt Concrete In Situ Density	60	T79-T114, SA1-SA24 (T129-T152)
Unbound Base/Subbase Layers (Per Layer) In Situ Density, Moisture Content (Nuclear Gauge) Moisture Content Samples	21 3	T37-T57 B7-B9
Asphalt Treated Base In Situ Density	35	T58-T78, SA7-SA20 (T115-T128)
Subgrade In Situ Density, Moisture Content (Nuclear Gauge)	42	T1-T36, B1-B6

TABLE 5. FIELD AND LABORATORY MATERIALS TESTING PLAN
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Material And Test Description	SHRP Des.	SHRP Protocol	No. Of Tests	Sample Location
<u>Asphalt Treated Base (Continued)</u>				
Asphalt Cement (From Tanker) - Penetration at 50F, 77F, 90F	AE02	P22	3	BC01, BC02, BC-03 - From Plant
Specific Gravity (60F)	AE03	P23	3	BC01, BC02, BC-03 - From Plant
Viscosity at 77F	AE04	P24	3	BC01, BC02, BC-03 - From Plant
Viscosity at 140F, 275F	AE05	P25	3	BC01, BC02, BC-03 - From Plant

TABLE 5. FIELD AND LABORATORY MATERIALS TESTING PLAN
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Material And Test Description	SHRP Des.	SHRP Protocol	No. Of Tests	Sample Location
<u>Asphaltic Concrete Surface and Binder</u>				
Core Examination/Thickness	AC01	P01	60	C1-C60 --- Note 4
Bulk Specific Gravity	AC02	P02	60	C1-C60
Maximum Specific Gravity	AC03	P03	3	BA-20, BA-21, BA-22 - From Plant
Asphalt Content (Extraction)	AC04	P04	3	BA-20, BA-21, BA-22 - From Plant
Moisture Susceptibility	AC05	P05	3	BA-20, BA-21, BA-22 - From Plant
Creep Modulus	AC06	P06	1	C3, C23, C47
Resilient Modulus	AC07	P07	6	C1-C3, C7-C9, C25-C27, C31-C33, C45-C47, C55-C57
Tensile Strength	AC07	P07	24	C1-C4, C7-C10, C25-C28, C31-C34, C45-C48, C55-C58
In-Place Density		SHRP-LTPP Method	60	SA1-SA24 (T129-T152), T79-T114
Extracted Aggregate - Bulk Specific Gravity:				
Coarse Aggregate	AG01	P11	3	BA-20, BA-21, BA-22
Fine Aggregate	AG02	P12	3	BA-20, BA-21, BA-22
Type and Classification:				
Coarse Aggregate	AG03	P13	3	BA-20, BA-21, BA-22
Fine Aggregate	AG03	P13	3	BA-20, BA-21, BA-22
Gradation of Aggregate	AG04	P14	3	BA-20, BA-21, BA-22
NAA Test for Fine Aggregate Particle Shape	AG05	P14A	3	BA-20, BA-21, BA-22
Coarse Aggregate Shape	AG06	P14B	3	BA-20, BA-21, BA-22

TABLE 5. FIELD AND LABORATORY MATERIALS TESTING PLAN
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)

Material And Test Description	SHRP Des.	SHRP Protocol	No. Of Tests	Sample Location
<u>Asphaltic Concrete Surface and Binder (Continued)</u>				
Asphalt Cement -				
Abson Recovery	AE01	P21	3	BA-20, BA-21, BA-22
Penetration at 50F, 77F, 90F	AE02	P22	3	BA-20, BA-21, BA-22
Specific Gravity (60F)	AE03	P23	3	BA-20, BA-21, BA-22
Viscosity at 77F	AE04	P24	3	BA-20, BA-21, BA-22
Viscosity at 140F, 275F	AE05	P25	3	BA-20, BA-21, BA-22

NOTE 1 - Visual-manual classification ONLY.

NOTE 2 - Laboratory permeability test to be developed.

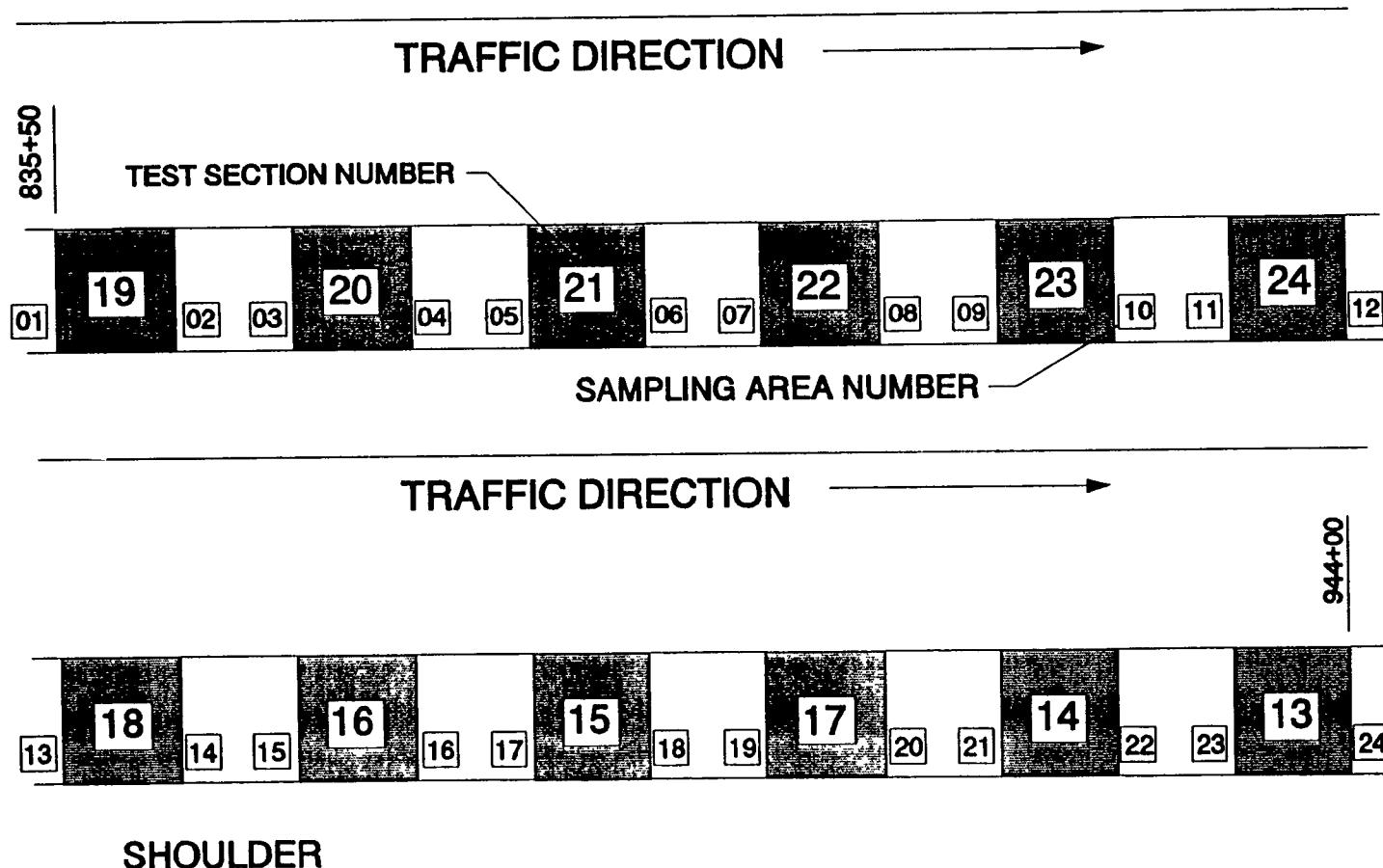
NOTE 3 - Revision to existing P07 protocol or develop new protocol P09.

NOTE 4 - Does NOT include cores or bulk sampling requirements for SHRP Asphalt Research Program.

**TABLE 6. MATERIALS SAMPLING FOR SHRP ASPHALT RESEARCH PROGRAM
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

Material And Sample Description	Number Of Samples	Sample Location
Asphalt Cement (5 Gallon Containers)	11	Plant
Aggregate (55 Gallon Drums)	2	Plant
Finished Asphaltic Concrete Mix (50 Lbs. Each - Surface, Binder, ATB, PATB)	4	Plant
Asphalt Concrete - 4" Diam. Cores	24	C61-C84

**FIGURE 4. SITE LAYOUT WITH SAMPLING AREAS
ARKANSAS SPS-1, US-63 NBL
CRAIGHEAD COUNTY, ARKANSAS**



**FIGURE 5. SAMPLING AND TESTING LOCATIONS FOR SUBGRADE
ARKANSAS SPS-1, US-63 NBL
CRAIGHEAD COUNTY, ARKANSAS**

	050119	050120	050121	050122	050123	050124	
Sampling and Field Testing Locations	++ T1 T2 T3	B1 ■	A1 A2 A3 O O O T4 T5 T6	++ T7 T8 T9	B2 ■	M AB AB O O O T10 T11 T12	++ T13 T14 T15
	⊗ S1	⊗ S2	⊗ S3	⊗ S4	⊗ S5	⊗ S6	⊗ S7

C.23

	050118	050116	050115	050117	050114	050113	
Sampling and Field Testing Locations	++ T10 T20 T21	B4 ■	A10 A11 A12 O O O T22 T23 T24	++ T25 T26 T27		A13 A14 A15 O O O T28 T29 T30	++ T31 T32 T33
	⊗ S7	⊗ S8	⊗ S9	⊗ S10	⊗ S11	⊗ S12	

LEGEND

- 2 X 2 bulk sampling location (B1 - B6) to 12" below top of subgrade.
- Shelby tube/splitspoon sampling to 4' below top of subgrade (A1 - A18).
- ⊗ Shoulder probe (S1 - S12)
- + Location of in situ density testing (T1 - T36)

FIGURE 6. SAMPLING AND TESTING LOCATIONS FOR DGAB
ARKANSAS SPS-1, US-63 NBL
CRAIGHEAD COUNTY, ARKANSAS

Stage of Construction	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	
Section No.	050119	050120	050121	050122	050123	050124	
Sampling and Field Testing Locations	+ + + T37 T38 T39	B7 ■	+ + + T40 T41 T42	+ + + T43 T44 T45	N/A ■	N/A	N/A

Stage of Construction	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	DGAB Prep. Sg.	
Section No.	050118	050116	050115	050117	050114	050113	
Sampling and Field Testing Locations	+ + + T46 T47 T48		N/A	N/A	+ + + T49 T50 T51	+ + + T52 T53 T54	+ + + T55 T56 T57

LEGEND

- + Location of in situ density testing (T37 - T57)
- Location of bulk sampling of DGAB (B7 - B9)

Prep. Sg. - Prepared Subgrade
PATB - Permeable Asphalt Treated Base
DGAB - Dense Graded Aggregate Base

**FIGURE 7. TESTING LOCATIONS FOR ATB
ARKANSAS SPS-1, US-63 NBL
CRAIGHEAD COUNTY, ARKANSAS**

Stage of Construction	PATB DGAB Prep. Sg.	PATB DGAB Prep. Sg.	PATB DGAB Prep. Sg.	ATB PATB Prep. Sg.	ATB PATB Prep. Sg.	ATB PATB Prep. Sg.				
Section No.	050119	050120	050121	050122	050123	050124				
Sampling and Field Testing Locations	N/A		N/A		N/A ++ T58 T59 T60		++ T61 T62 T63		++ T64 T65 T66	

Stage of Construction	ATB DGAB Prep. Sg.	ATB Prep. Sg.	ATB Prep. Sg.	ATB DGAB Prep. Sg.	DGAB Prep. Sg.	
Section No.	050118	050116	050115	050117	050114	050113
Sampling and Field Testing Locations	++ T67 T68 T69	++ T70 T71 T72	++ T73 T74 T75	++ T76 T77 T78	N/A	N/A

LEGEND

+ Location of in situ density testing (T58 - T78)

Prep. Sg. - Prepared Subgrade

PATB - Permeable Asphalt Treated Base

DGAB - Dense Graded Aggregate Base

ATB - Asphalt Treated Base

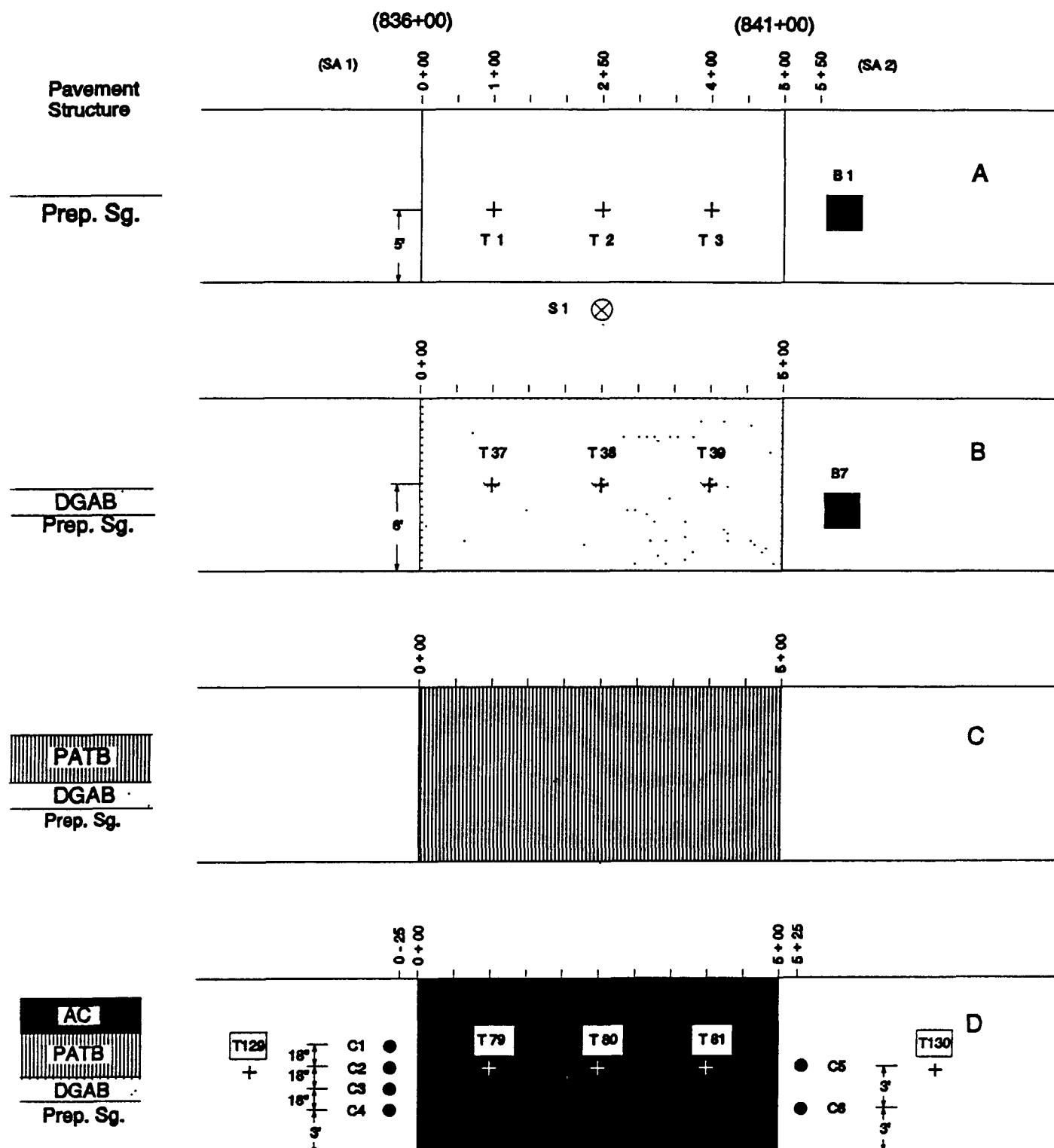
FIGURE 8. SAMPLING AND TESTING LOCATIONS FOR AC SURFACE
ARKANSAS SPS-1 , US-63 NBL
CRAIGHEAD COUNTY, ARKANSAS

Stage of Construction	AC PATB DGAB Prep. Sq.	AC PATB DGAB Prep. Sq.	AC PATB DGAB Prep. Sq.	AC ATB PATB Prep. Sq.	AC ATB PATB Prep. Sq.	AC ATB PATB Prep. Sq.
Section No.	050119	050120	050121	050122	050123	050124
Sampling and Field Testing Locations	C1 ● C2 ● C3 ● + + + C4 ● T79 T80 T81	C7 ● C8 ● C9 ● + + + C10 ● T82 T83 T84	C11 C13 ● C12 C14 ● T85 T86 T87	C16 C17 ● C18 C19 ● T88 T89 T90	C19 C21 ● C20 C22 ● T91 T92 T93	C35 ● C36 ● C37 ● + + + C38 ● T94 T95 T96

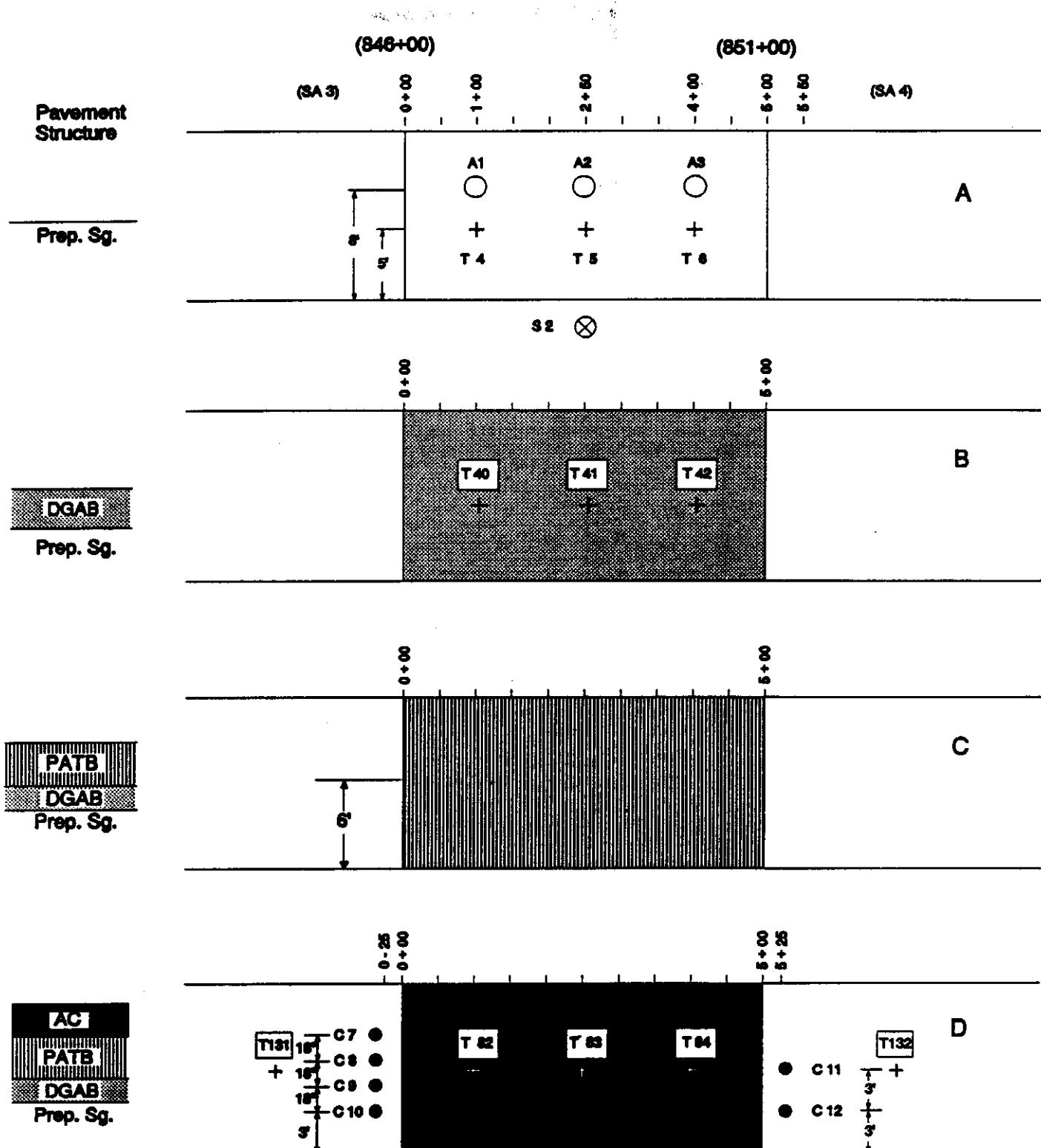
Stage of Construction	AC ATB DGAB Prep. Sq.	AC ATB Prep. Sq.	AC ATB Prep. Sq.	AC ATB DGAB Prep. Sq.	AC DGAB Prep. Sq.	AC DGAB Prep. Sq.
Section No.	050118	050116	050115	050117	050114	050113
Sampling and Field Testing Locations	C31 ● C32 ● C33 ● + + + C34 ● T97 T98 T99	C35 C37 ● C36 C38 ● + + + T100 T101 T102	C39 C41 ● C40 C42 ● + + + T103 T104 T105	C45 ● C46 ● C47 ● + + + C48 C49 ● T106 T107 T108	C60 ● C61 ● C62 ● + + + C63 C64 ● T109 T110 T111	C66 ● C67 ● C68 ● + + + C69 C70 ● T112 T113 T114

LEGEND

- 4" OD Core of Asphalt Concrete Surface (C51 - C60)
 - 4" OD Core of Asphalt Concrete Surface and Treated Base (C1 - C50)
 - + Location of in situ density testing (T79 - T114)
 - SHRP Asphalt Research Cores (C61-C84)
- Prep. Sq. - Prepared Subgrade
PATB - Permeable Asphalt Treated Base
DGAB - Dense Graded Aggregate Base
ATB - Asphalt Treated Base
AC - Asphalt Concrete Surface

FIGURE 9. SAMPLING AND TESTING PLAN FOR TEST SECTION 050119

- A Testing on prepared Subgrade (T1 - T3, B1, S1)
- B Testing on compacted DGAB (T37 - T39, B7)
- C No testing on compacted PATB
- D Testing on finished AC Surface (T79 - T81, T129, T130)
Coring AC Surface and bound layers (C1 - C6)

FIGURE 10. SAMPLING AND TESTING PLAN FOR TEST SECTION 050120

- A** Testing on prepared Subgrade (**T4 - T6, A1- A3, S2**)
- B** Testing on compacted DGAB (**T40 - T42**)
- C** No testing on compacted PATB
- D** Testing on finished AC Surface (**T82 - T84, T131, T132**)
Coring AC Surface and bound layers (**C7 - C12**)

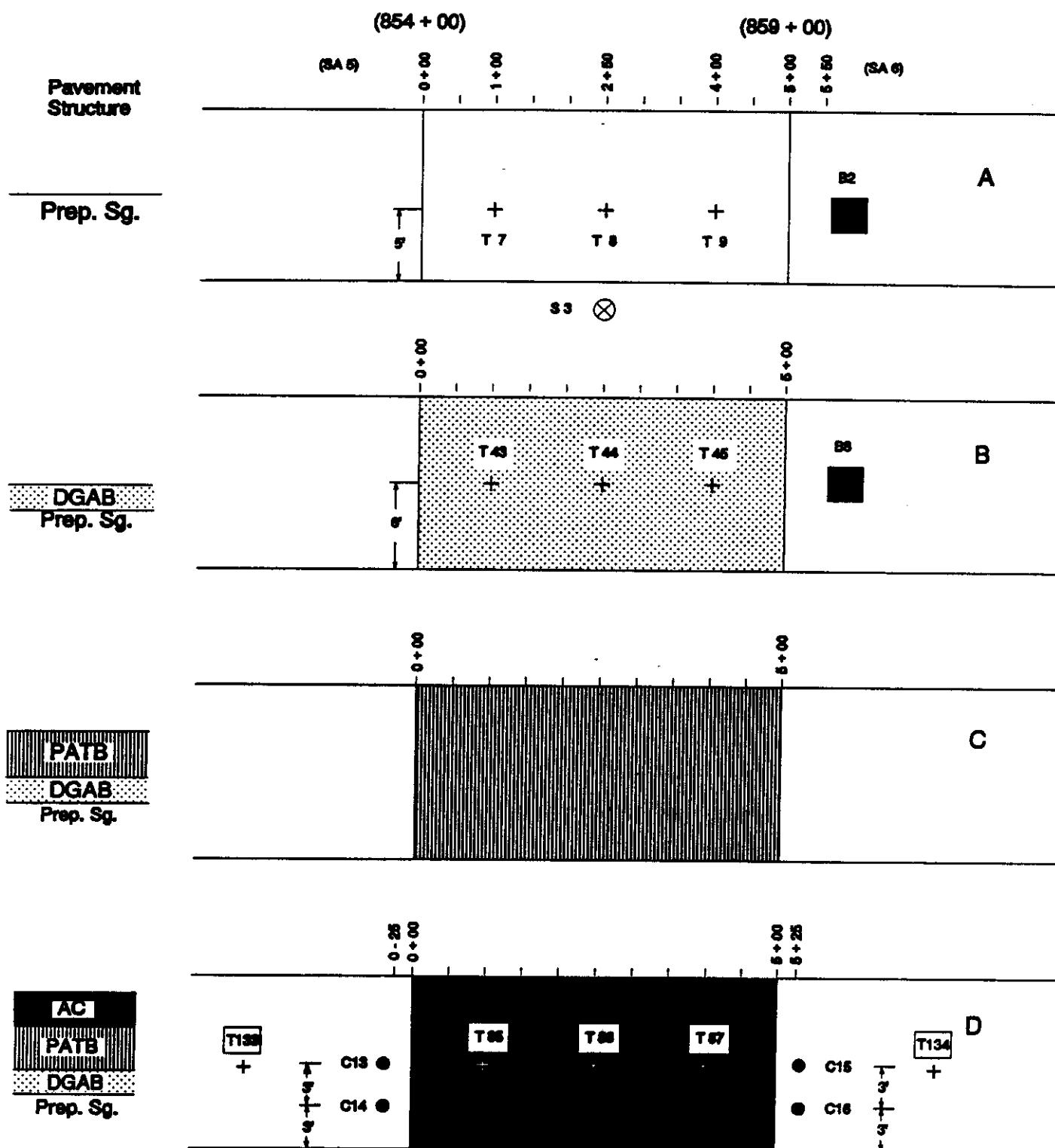
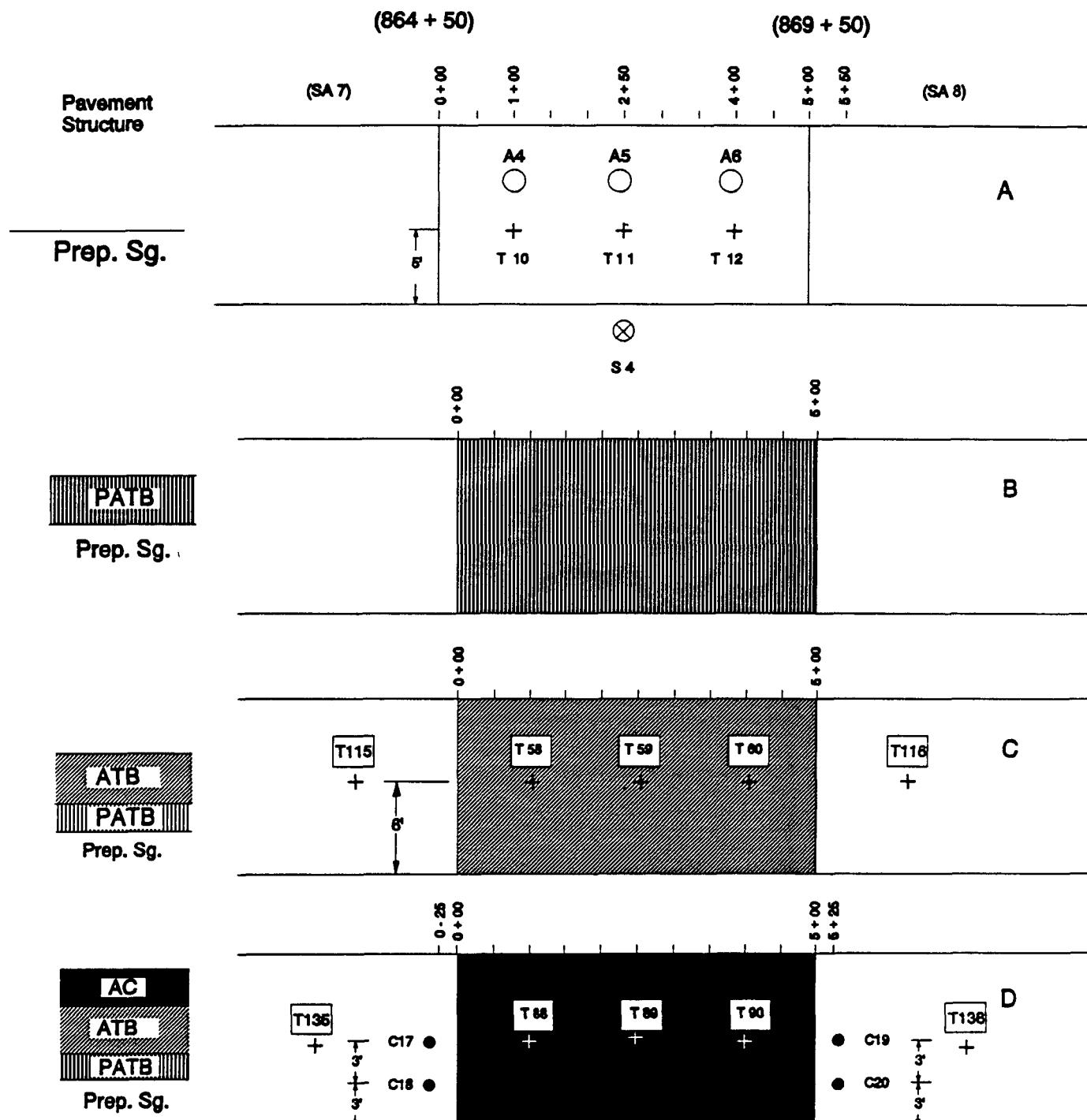
FIGURE 11. SAMPLING AND TESTING PLAN FOR TEST SECTION 050121

FIGURE 12. SAMPLING AND TESTING PLAN FOR TEST SECTION 050122



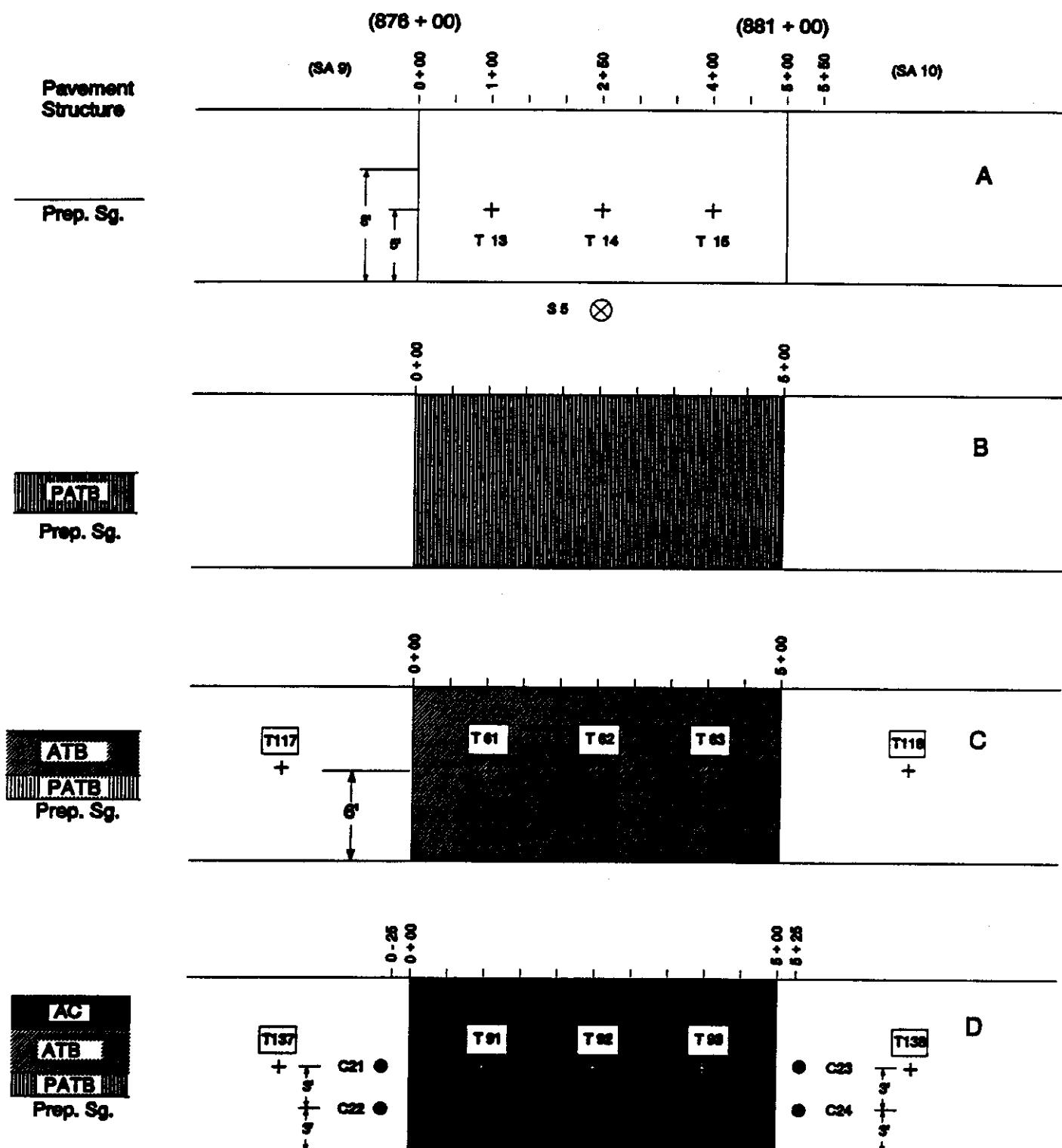
A Testing on prepared Subgrade (T10 - T12, A4 - A6, S4)

B No testing on compacted PATB

C Testing on compacted ATB (T58 - T60, T115, T116)

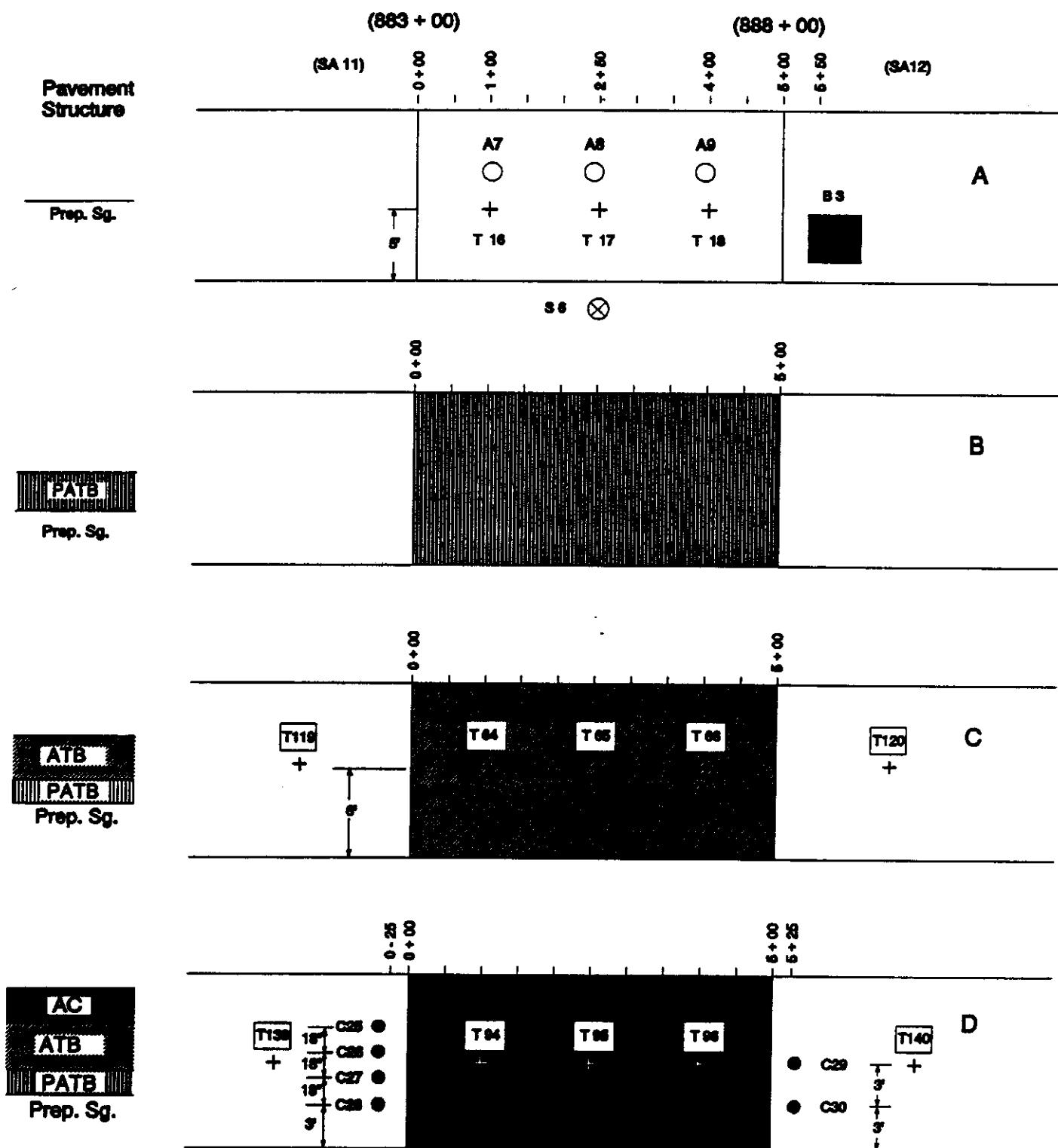
D Testing on finished AC Surface (T88 - T90, T135, T136)

Coring AC Surface and bound layers (C17 - C20)

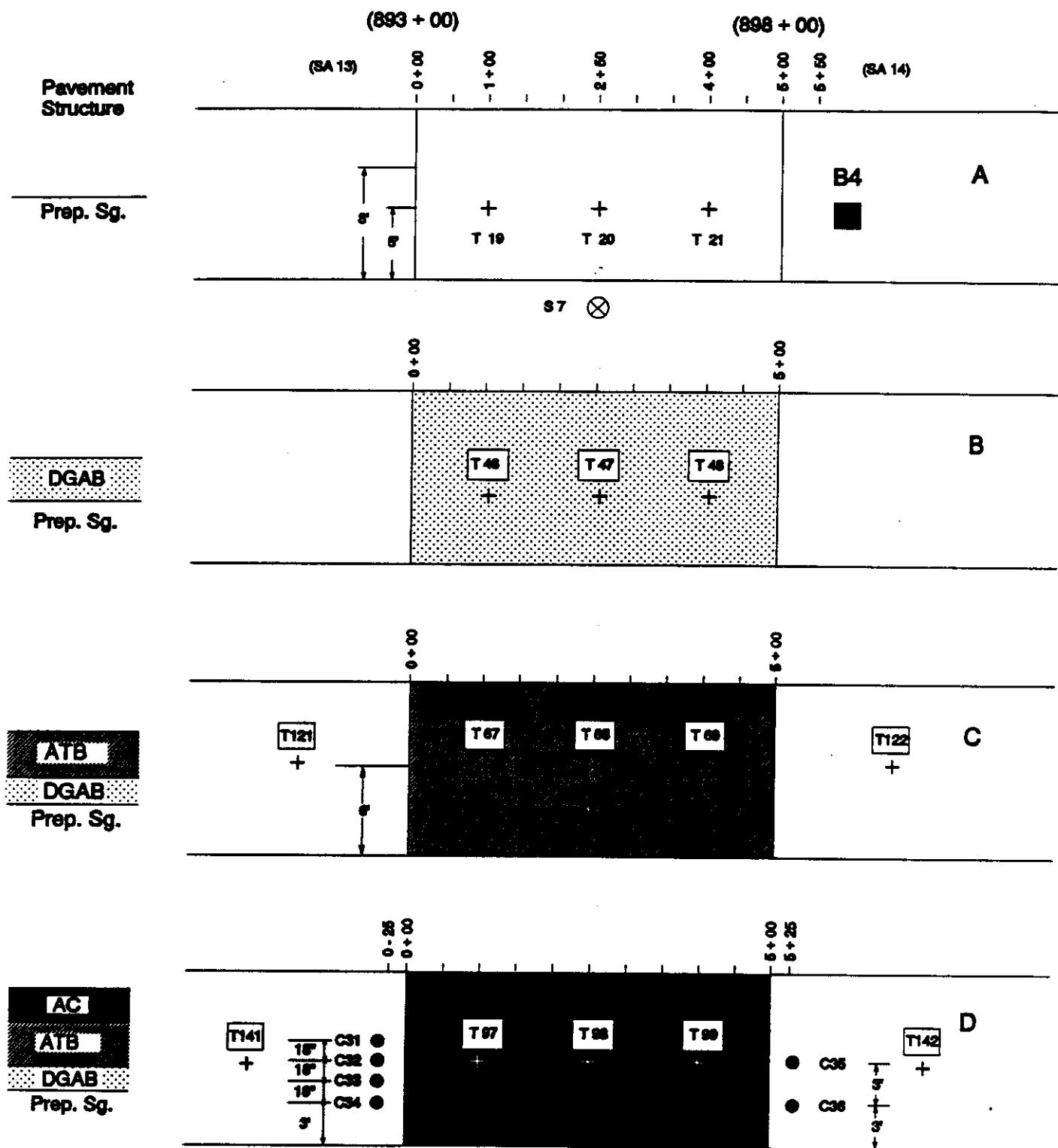
FIGURE 13. SAMPLING AND TESTING PLAN FOR TEST SECTION 050123

- A** Testing on prepared Subgrade (T13 - T15, S5)
- B** No testing on compacted PATB
- C** Testing on compacted ATB (T61 - T63, T117, T118)
- D** Testing on finished AC Surface (T91 - T93, T137, T138)
Coring AC Surface and bound layers (C21 - C24)

FIGURE 14. SAMPLING AND TESTING PLAN FOR TEST SECTION 050124

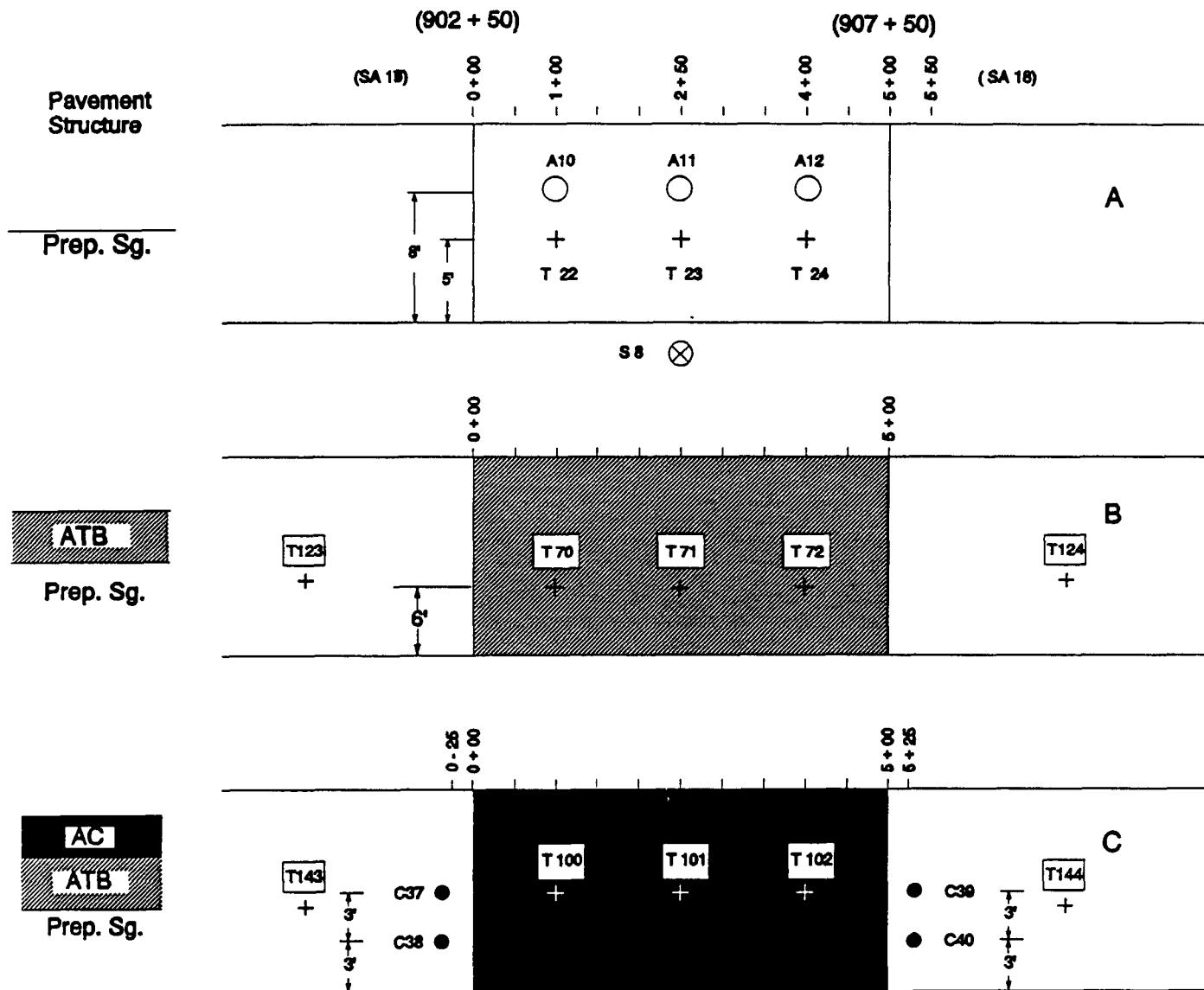


- A Testing on prepared Subgrade (T16 - T18, A7 - A9, B3, S6)
- B No testing on compacted PATB
- C Testing on compacted ATB(T64 - T66, T119, T120)
- D Testing on finished AC Surface (T94 - T96, T139, T140)
Coring AC Surface and bound layers (C25 - C30)

FIGURE 15. SAMPLING AND TESTING PLAN FOR TEST SECTION 050118

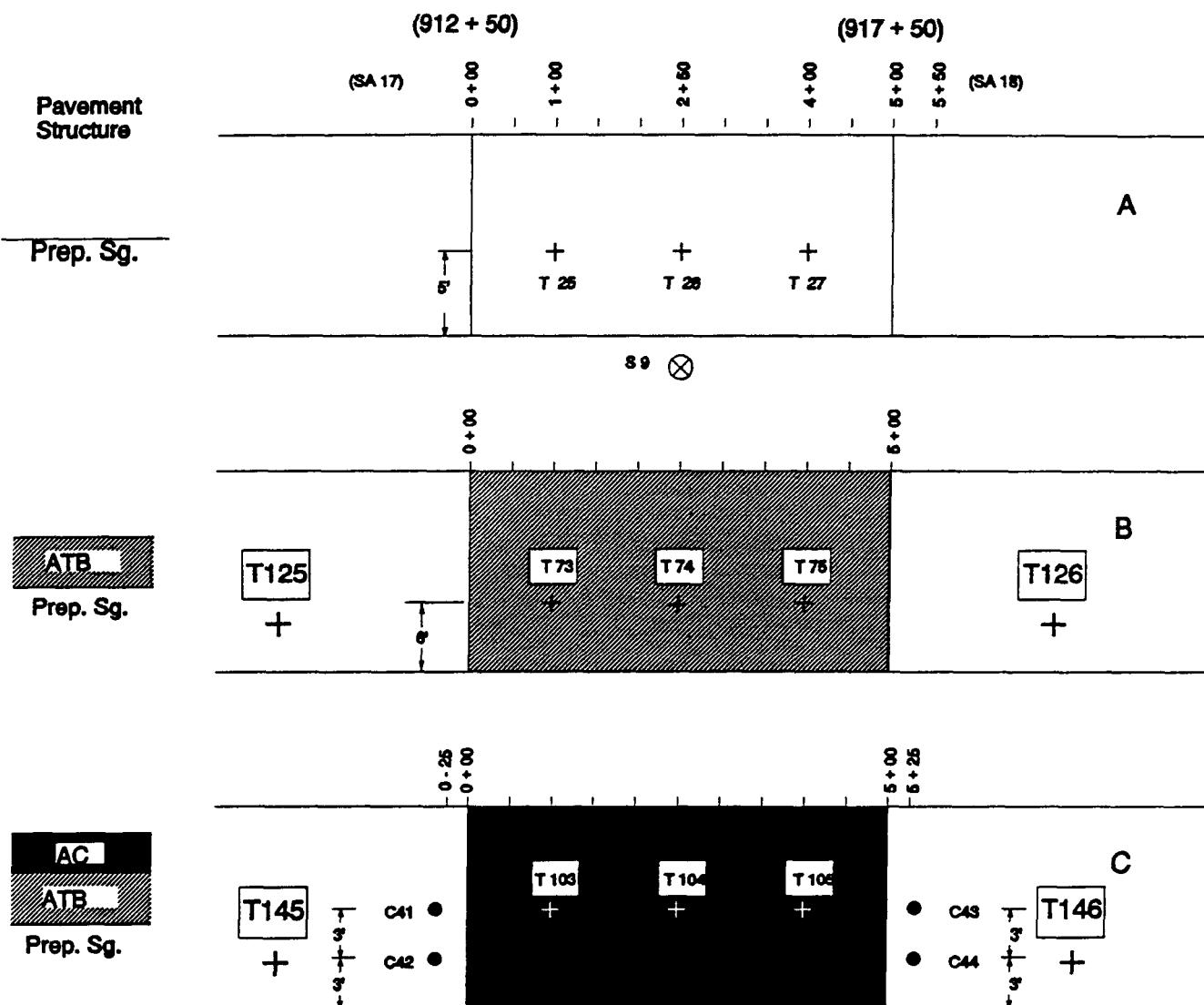
- A Testing on prepared Subgrade (T19 - T21, B4, S7)
- B Testing on compacted DGAB (T46 - T48)
- C Testing on compacted ATB (T67 - T69, T121, T122)
- D Testing on finished AC Surface (T97 - T99, T141, T142)
Coring AC Surface and bound layers (C31 - C36)

FIGURE 16. SAMPLING AND TESTING PLAN FOR TEST SECTION 050116



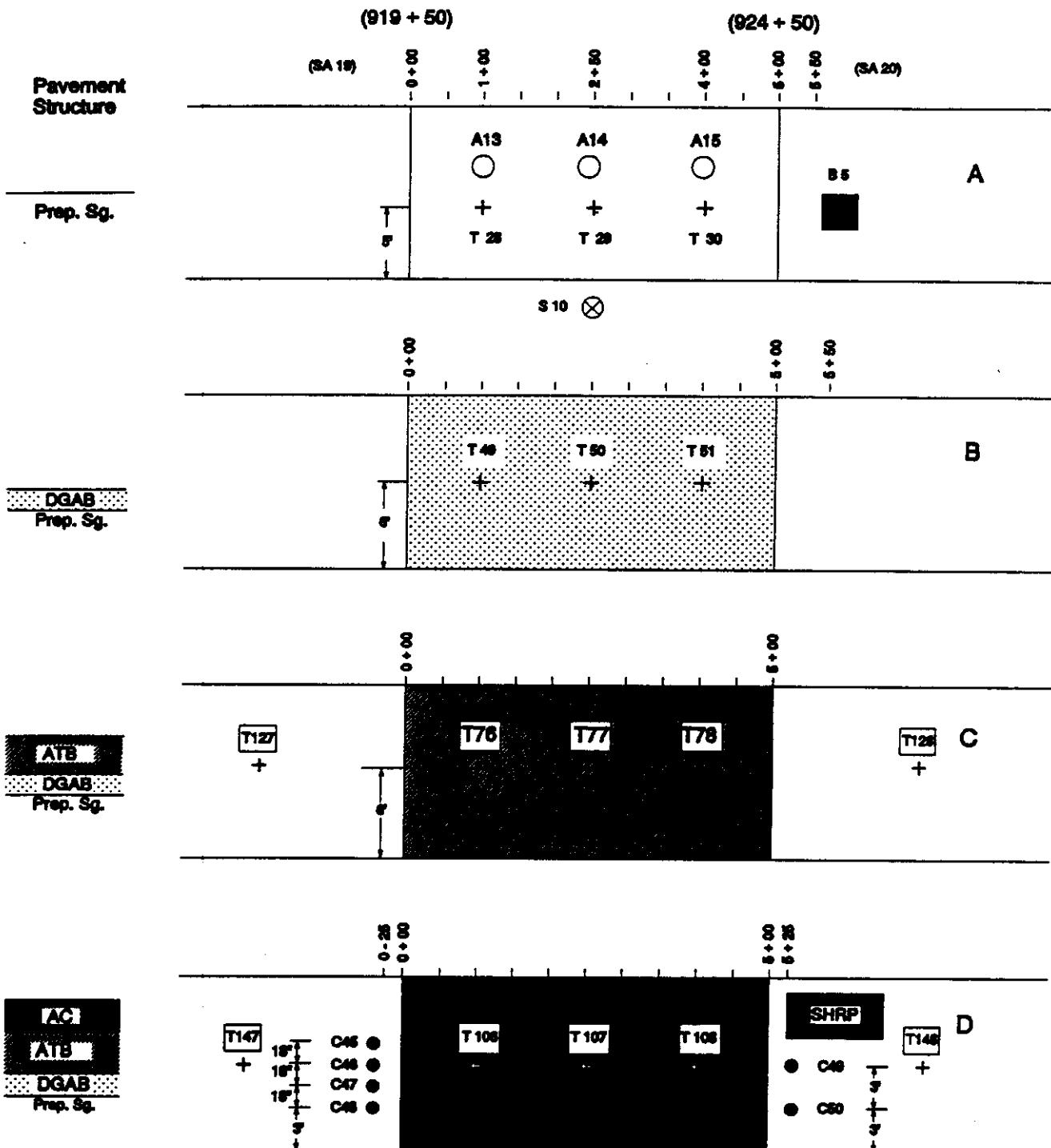
- A Testing on prepared Subgrade (T22 - T24, A10 - A12, S8)
- B Testing on compacted ATB (T70 - T72, T123, T124)
- C Testing on finished AC Surgace (T100 - T102, T143, T144)
Coring AC Surface and bound layers (C37 - C40)

FIGURE 17. SAMPLING AND TESTING PLAN FOR TEST SECTION 050115



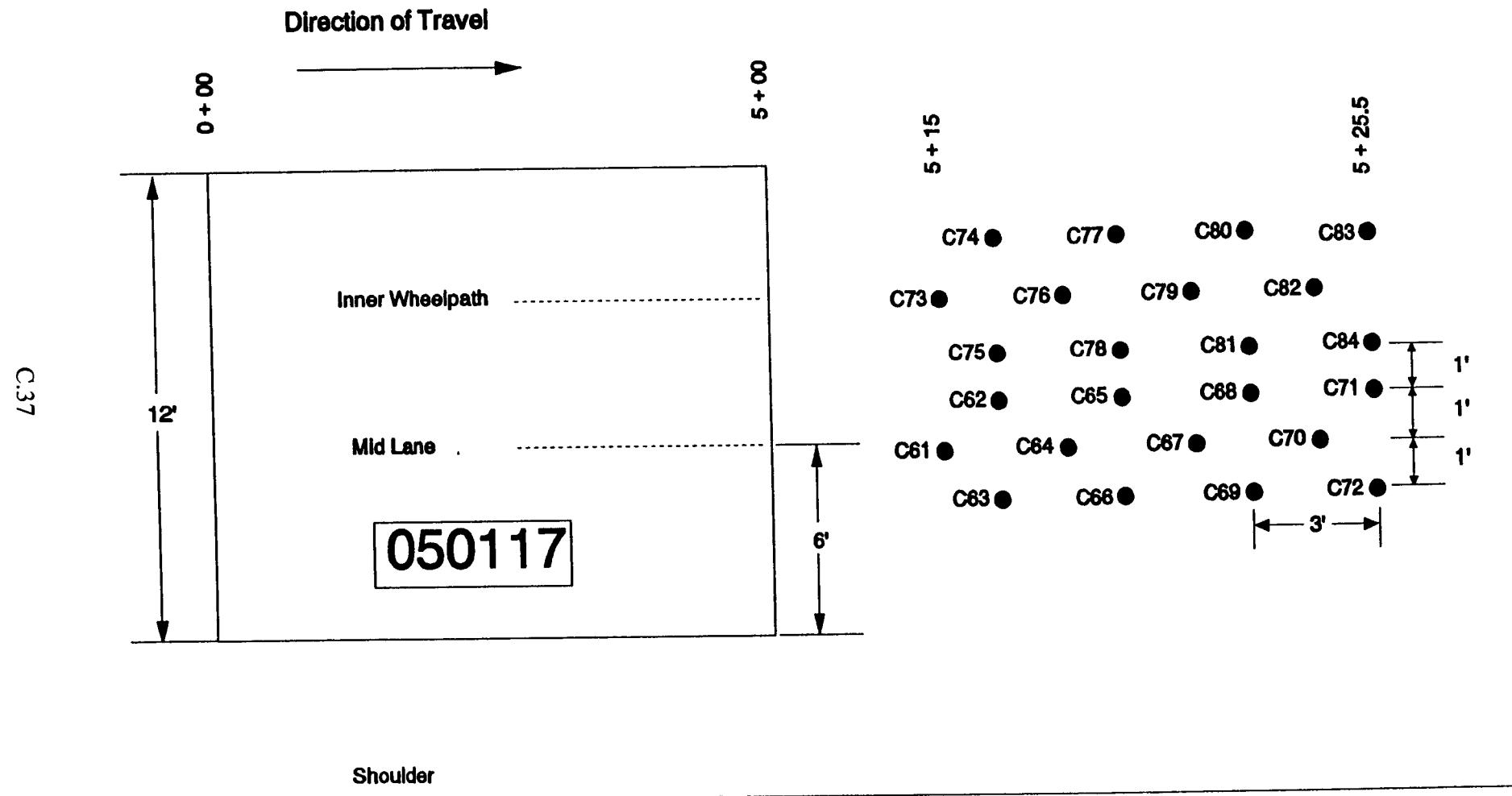
- A Testing on prepared Subgrade (T25 - T27, S9)
- B Testing on compacted ATB (T73 - T75, T125, T126)
- C Testing on finished AC Surface (T103 - T105, T145, T146)
Coring AC Surface and bound layers (C41 - C44)

FIGURE 18. SAMPLING AND TESTING PLAN FOR TEST SECTION 050117



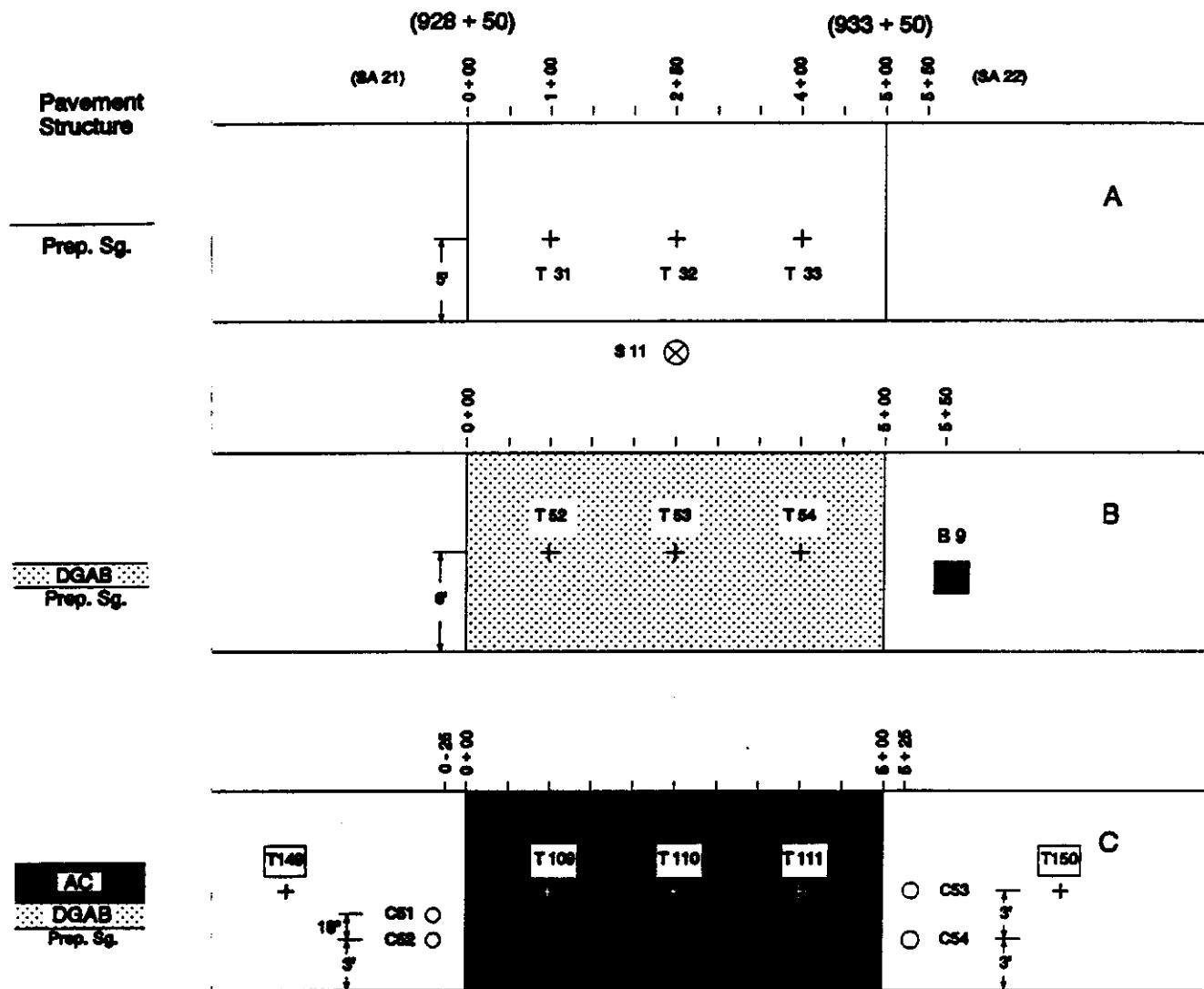
- A Testing on prepared Subgrade (T28 - T30, A13 - A15, B5, S10)
 - B Testing on compacted DGAB (T49 - T51)
 - C Testing on compacted ATB (T76 - T78, T127, T128)
 - D Testing on finished AC Surface (T106 - T108, T147, T148)
 - Coring AC Surface and bound layers (C45 - C50)
 - Coring AC Surface SHRP Asphalt Research (C61 - C84)

FIGURE 19. SHRP Asphalt Research Cores



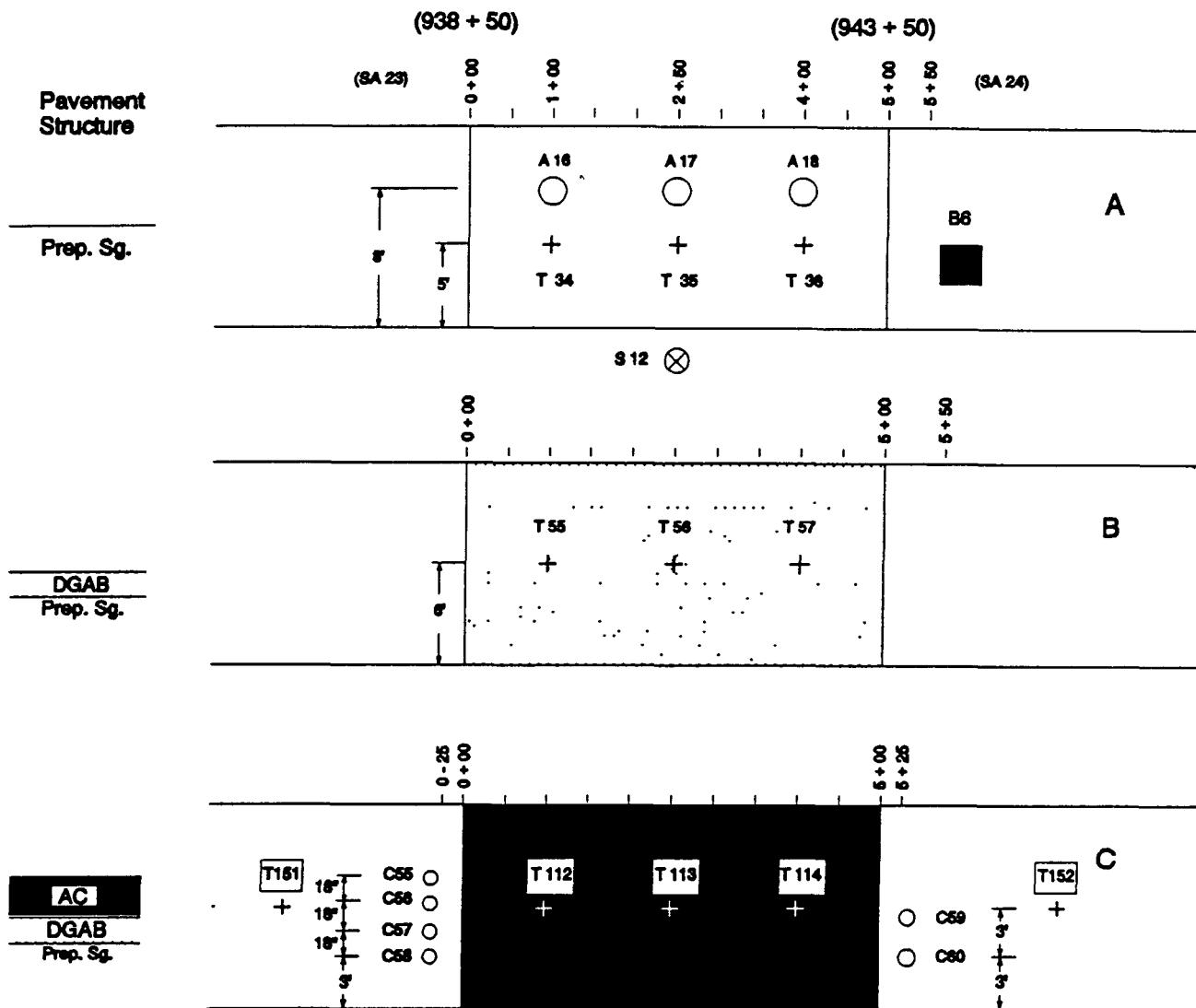
SHRP Asphalt Research 4" Cores (C61 - C84)

**FIGURE 20. SAMPLING AND TESTING PLAN FOR
TEST SECTION 050114**



- A Testing on prepared Subgrade (T31 - T33, S11)
- B Testing on compacted DGAB (T52 - T54, B9)
- C Testing on finished AC Surface (T109 - T111, T149, T150)
Coring AC Surface (C51 - C54)

FIGURE 21. SAMPLING AND TESTING PLAN FOR TEST SECTION 050113



- A Testing on prepared Subgrade (T34 - T36, A16 - A18, S12, B6)
 - B Testing on compacted DGAB (T55 - T57)
 - C Testing on finished AC Surface (T112 - T114, T151, T152)
Coring AC Surface (C55 - C60)

**TABLE 7. SUBGRADE MATERIALS FIELD SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

SUBGRADE SAMPLES					
Approx. Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
841+50	050119	5+50	5' Lt	B1	Bulk
859+50	050121	5+50	5' Lt	B2	Bulk
888+50	050124	5+50	5' Lt	B3	Bulk
898+50	050118	5+50	5' Lt	B4	Bulk
925+00	050117	5+50	5' Lt	B5	Bulk
944+00	050113	5+50	5' Lt	B6	Bulk
847+00	050120	1+00	8' Lt	A1	Shelby Tube
848+50	050120	2+50	8' Lt	A2	Shelby Tube
850+00	050120	4+00	8' Lt	A3	Shelby Tube
865+50	050122	1+00	8' Lt	A4	Shelby Tube
867+00	050122	2+50	8' Lt	A5	Shelby Tube
868+50	050122	4+00	8' Lt	A6	Shelby Tube
884+00	050124	1+00	8' Lt	A7	Shelby Tube
885+50	050124	2+50	8' Lt	A8	Shelby Tube
887+00	050124	4+00	8' Lt	A9	Shelby Tube
903+50	050116	1+00	8' Lt	A10	Shelby Tube
905+00	050116	2+50	8' Lt	A11	Shelby Tube
906+50	050116	4+00	8' Lt	A12	Shelby Tube
920+50	050117	1+00	8' Lt	A13	Shelby Tube
922+00	050117	2+50	8' Lt	A14	Shelby Tube
923+50	050117	4+00	8' Lt	A15	Shelby Tube
939+50	050113	1+00	8' Lt	A16	Shelby Tube
941+00	050113	2+50	8' Lt	A17	Shelby Tube
942+50	050113	4+00	8' Lt	A18	Shelby Tube
838+50	050119	2+50	9' Rt	S1	Shoulder Probe

**TABLE 7. SUBGRADE MATERIALS FIELD SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)**

SUBGRADE SAMPLES					
Approx. Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
848+50	050120	2+50	9' Rt	S2	Shoulder Probe
856+50	050121	2+50	9' Rt	S3	Shoulder Probe
867+00	050122	2+50	9' Rt	S4	Shoulder Probe
878+50	050123	2+50	9' Rt	S5	Shoulder Probe
885+50	050124	2+50	9' Rt	S6	Shoulder Probe
895+50	050118	2+50	9' Rt	S7	Shoulder Probe
905+00	050116	2+50	9' Rt	S8	Shoulder Probe
915+00	050115	2+50	9' Rt	S9	Shoulder Probe
922+00	050117	2+50	9' Rt	S10	Shoulder Probe
931+00	050114	2+50	9' Rt	S11	Shoulder Probe
941+00	050113	2+50	9' Rt	S12	Shoulder Probe
837+00	050119	1+00	5' Lt	T1	Moisture/Density
838+50	050119	2+50	5' Lt	T2	Moisture/Density
840+00	050119	4+00	5' Lt	T3	Moisture/Density
847+00	050120	1+00	5' Lt	T4	Moisture/Density
848+50	050120	2+50	5' Lt	T5	Moisture/Density
850+00	050120	4+00	5' Lt	T6	Moisture/Density
855+00	050121	1+00	5' Lt	T7	Moisture/Density
856+50	050121	2+50	5' Lt	T8	Moisture/Density
858+00	050121	4+00	5' Lt	T9	Moisture/Density
865+50	050122	1+00	5' Lt	T10	Moisture/Density
867+00	050122	2+50	5' Lt	T11	Moisture/Density
868+50	050122	4+00	5' Lt	T12	Moisture/Density
877+00	050123	1+00	5' Lt	T13	Moisture/Density

**TABLE 7. SUBGRADE MATERIALS FIELD SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)**

SUBGRADE SAMPLES					
Approx Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
878+50	050123	2+50	5' Lt	T14	Moisture/Density
880+00	050123	4+00	5' Lt	T15	Moisture/Density
884+00	050124	1+00	5' Lt	T16	Moisture/Density
885+50	050124	2+50	5' Lt	T17	Moisture/Density
887+00	050124	4+00	5' Lt	T18	Moisture/Density
894+00	050118	1+00	5' Lt	T19	Moisture/Density
895+50	050118	2+50	5' Lt	T20	Moisture/Density
897+00	050118	4+00	5' Lt	T21	Moisture/Density
903+50	050116	1+00	5' Lt	T22	Moisture/Density
905+00	050116	2+50	5' Lt	T23	Moisture/Density
906+50	050116	4+00	5' Lt	T24	Moisture/Density
913+50	050115	1+00	5' Lt	T25	Moisture/Density
915+00	050115	2+50	5' Lt	T26	Moisture/Density
916+50	050115	4+00	5' Lt	T27	Moisture/Density
920+50	050117	1+00	5' Lt	T28	Moisture/Density
922+00	050117	2+50	5' Lt	T29	Moisture/Density
923+50	050117	4+00	5' Lt	T30	Moisture/Density
929+50	050114	1+00	5' Lt	T31	Moisture/Density
931+00	050114	2+50	5' Lt	T32	Moisture/Density
932+50	050114	4+00	5' Lt	T33	Moisture/Density
939+50	050113	1+00	5' Lt	T34	Moisture/Density
941+00	050113	2+50	5' Lt	T35	Moisture/Density
942+50	050113	4+00	5' Lt	T36	Moisture/Density

**TABLE 8. DGAB FIELD MATERIALS SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

DGAB SAMPLES					
Approx. Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
841+50	050119	5+50	5' Lt	B7	Bulk
859+50	050121	5+50	5' Lt	B8	Bulk
934+00	050114	5+50	5' Lt	B9	Bulk
837+00	050119	1+00	6' Lt	T37	Moisture/Density
838+50	050119	2+50	6' Lt	T38	Moisture/Density
840+00	050119	4+00	6' Lt	T39	Moisture/Density
847+00	050120	1+00	6' Lt	T40	Moisture/Density
848+50	050120	2+50	6' Lt	T41	Moisture/Density
850+00	050120	4+00	6' Lt	T42	Moisture/Density
855+00	050121	1+00	6' Lt	T43	Moisture/Density
856+50	050121	2+50	6' Lt	T44	Moisture/Density
858+00	050121	4+00	6' Lt	T45	Moisture/Density
894+00	050118	1+00	6' Lt	T46	Moisture/Density
895+50	050118	2+50	6' Lt	T47	Moisture/Density
897+00	050118	4+00	6' Lt	T48	Moisture/Density
920+50	050117	1+00	6' Lt	T49	Moisture/Density
922+00	050117	2+50	6' Lt	T50	Moisture/Density
923+50	050117	4+00	6' Lt	T51	Moisture/Density
929+50	050114	1+00	6' Lt	T52	Moisture/Density
931+00	050114	2+50	6' Lt	T53	Moisture/Density
932+50	050114	4+00	6' Lt	T54	Moisture/Density
939+50	050113	1+00	6' Lt	T55	Moisture/Density
941+00	050113	2+50	6' Lt	T56	Moisture/Density
942+50	050113	4+00	6' Lt	T57	Moisture/Density

**TABLE 9. PATB FIELD MATERIALS SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

PATB SAMPLES					
Approx E Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
Plant	-----	-----	-----	BT-01	Bulk
Plant	-----	-----	-----	BT-02	Bulk
Plant	-----	-----	-----	BT-03	Bulk

**TABLE 10. ATB FIELD MATERIAL SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

ATB SAMPLES					
Approx. Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
865+50	050122	1+00	6' Lt	T58	Density
867+00	050122	2+50	6' Lt	T59	Density
868+50	050122	4+00	6' Lt	T60	Density
877+00	050123	1+00	6' Lt	T61	Density
878+50	050123	2+50	6' Lt	T62	Density
880+00	050123	4+00	6' Lt	T63	Density
884+00	050124	1+00	6' Lt	T64	Density
885+50	050124	2+50	6' Lt	T65	Density
887+00	050124	4+00	6' Lt	T66	Density
894+00	050118	1+00	6' Lt	T67	Density
895+50	050118	2+50	6' Lt	T68	Density
897+00	050118	4+00	6' Lt	T69	Density
903+50	050116	1+00	6' Lt	T70	Density
905+00	050116	2+50	6' Lt	T71	Density
906+50	050116	4+00	6' Lt	T72	Density
913+50	050115	1+00	6' Lt	T73	Density
915+00	050115	2+50	6' Lt	T74	Density
916+50	050115	4+00	6' Lt	T75	Density
920+50	050117	1+00	6' Lt	T76	Density
922+00	050117	2+50	6' Lt	T77	Density
923+50	050117	4+00	6' Lt	T78	Density
864+25	050122	0-25	6' Lt	T115	Density
869+75	050122	5+25	6' Lt	T116	Density
875+75	050123	0-25	6' Lt	T117	Density

**TABLE 10. ATB MATERIALS FIELD SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS
(Continued)**

ATB SAMPLES					
Approx & Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
881+25	050123	5+25	6' Lt	T118	Density
882+75	050124	0-25	6' Lt	T119	Density
888+25	050124	5+25	6' Lt	T120	Density
892+75	050118	0-25	6' Lt	T121	Density
898+25	050118	5+25	6' Lt	T122	Density
902+25	050116	0-25	6' Lt	T123	Density
907+75	050116	5+25	6' Lt	T124	Density
912+25	050115	0-25	6' Lt	T125	Density
917+75	050115	5+25	6' Lt	T126	Density
919+25	050117	0-25	6' Lt	T127	Density
924+75	050117	5+25	6' Lt	T128	Density
Plant	----	----	----	BT20	Bulk
Plant	----	----	----	BT21	Bulk
Plant	----	----	----	BT22	Bulk

**TABLE 11. AC SURFACE FIELD MATERIALS SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**

AC SAMPLES					
Approx Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
835+75	050119	0-25	3',4.5',6',7.5'	C1,C2,C3,C4	4" Cores
841+25	050119	5+25	3',6'	C5,C6	4" Cores
845+75	050120	0-25	3',4.5',6',7.5'	C7,C8,C9,C10	4" Cores
851+25	050120	5+25	3',6'	C11,C12	4" Cores
853+75	050121	0-25	3',6'	C13,C14	4" Cores
859+25	050121	5+25	3',6'	C15,C16	4" Cores
864+25	050122	0-25	3',6'	C17,C18	4" Cores
869+75	050122	5+25	3',6'	C19,C20	4" Cores
875+75	050123	0-25	3',6'	C21,C22	4" Cores
881+25	050123	5+25	3',6'	C23,C24	4" Cores
882+75	050124	0-25	3',4.5',6',7.5'	C25,C26,C27,C28	4" Cores
888+25	050124	5+25	3',6'	C29,C30	4" Cores
892+75	050118	0-25	3',4.5',6',7.5'	C31,C32,C33,C34	4" Cores
898+25	050118	5+25	3',6'	C35,C36	4" Cores
902+25	050116	0-25	3',6'	C37,C38	4" Cores
907+75	050116	5+25	3',6'	C39,C40	4" Cores
912+25	050115	0-25	3',6'	C41,C42	4" Cores
917+75	050115	5+25	3',6'	C43,C44	4" Cores
919+25	050117	0-25	3',4.5',6',7.5'	C45,C46,C47,C48	4" Cores
924+75	050117	5+25	3',6'	C49,C50	4" Cores
928+25	050114	0-25	3',6'	C51,C52	4" Cores
933+75	050114	5+25	3',6'	C53,C54	4" Cores
938+25	050113	0-25	3',4.5',6',7.5'	C55,C56,C57,C58	4" Cores
943+75	050113	5+25	3',6'	C59,C60	4" Cores
924+65	050117	5+15	6',9'	C61,C73	4" Cores

**TABLE 11. AC SURFACE FIELD MATERIALS SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**
(Continued)

AC SAMPLES					
Approx E Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
924+66.5	050117	5+16.5	5',7',8',10'	C62,C63,C75,C74	4" Cores
924+68	050117	5+18	6',9'	C64,C76	4" Cores
924+69.5	050117	5+19.5	5',7',8'10'	C66,C65,C78,C77	4" Cores
924+71	050117	5+21	6',9'	C67,C79	4" Cores
924+72.5	050117	5+22.5	5',7',8'10'	C69,C68,C81,C80	4" Cores
924+74	050117	5+24	6',9'	C70,C82	4" Cores
924+75.5	050117	5+25.5	5',7',8'10'	C72,C71,C84,C83	4" Cores
837+00	050119	1+00	6' Lt	T79	Density
838+50	050119	2+50	6' Lt	T80	Density
840+00	050119	4+00	6' Lt	T81	Density
847+00	050120	1+00	6' Lt	T82	Density
848+50	050120	2+50	6' Lt	T83	Density
850+00	050120	4+00	6' Lt	T84	Density
855+00	050121	1+00	6' Lt	T85	Density
856+50	050121	2+50	6' Lt	T86	Density
858+00	050121	4+00	6' Lt	T87	Density
865+50	050122	1+00	6' Lt	T88	Density
867+00	050122	2+50	6' Lt	T89	Density
868+50	050122	4+00	6' Lt	T90	Density
877+00	050123	1+00	6' Lt	T91	Density
878+50	050123	2+50	6' Lt	T92	Density
880+00	050123	4+00	6' Lt	T93	Density
884+00	050124	1+00	6' Lt	T94	Density
885+50	050124	2+50	6' Lt	T95	Density

**TABLE 11. AC SURFACE FIELD MATERIALS SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**
(Continued)

AC SAMPLES					
Approx Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
887+00	050124	4+00	6' Lt	T96	Density
894+00	050118	1+00	6' Lt	T97	Density
895+50	050118	2+50	6' Lt	T98	Density
897+00	050118	4+00	6' Lt	T99	Density
903+50	050116	1+00	6' Lt	T100	Density
905+00	050116	2+50	6' Lt	T101	Density
906+50	050116	4+00	6' Lt	T102	Density
913+50	050115	1+00	6' Lt	T103	Density
915+00	050115	2+50	6' Lt	T104	Density
916+50	050115	4+00	6' Lt	T105	Density
920+50	050117	1+00	6' Lt	T106	Density
922+00	050117	2+50	6' Lt	T107	Density
923+50	050117	4+00	6' Lt	T108	Density
929+50	050114	1+00	6' Lt	T109	Density
931+00	050114	2+50	6' Lt	T110	Density
932+50	050114	4+00	6' Lt	T111	Density
939+50	050113	1+00	6' Lt	T112	Density
941+00	050113	2+50	6' Lt	T113	Density
942+50	050113	4+00	6' Lt	T114	Density
835+75	050119	0-25	6' Lt	T129	Density
841+25	050119	5+25	6' Lt	T130	Density
845+75	050120	0-25	6' Lt	T131	Density
851+25	050120	5+25	6' Lt	T132	Density
853+75	050121	0-25	6' Lt	T133	Density

**TABLE 11. AC SURFACE FIELD MATERIALS SAMPLING/TESTING
ARKANSAS SPS-1, US-63 NBL, CRAIGHEAD COUNTY, ARKANSAS**
(Continued)

AC SAMPLES					
Approx E Station	Section ID	Section Station	O/S From Lane Edge	Sample ID	Sample Type
859+25	050121	5+25	6' Lt	T134	Density
864+25	050122	0-25	6' Lt	T135	Density
869+75	050122	5+25	6' Lt	T136	Density
875+75	050123	0-25	6' Lt	T137	Density
881+25	050123	5+25	6' Lt	T138	Density
882+75	050124	0-25	6' Lt	T139	Density
888+25	050124	5+25	6' Lt	T140	Density
892+75	050118	0-25	6' Lt	T141	Density
898+25	050118	5+25	6' Lt	T142	Density
902+25	050116	0-25	6' Lt	T143	Density
907+75	050116	5+25	6' Lt	T144	Density
912+25	050115	0-25	6' Lt	T145	Density
917+75	050115	5+25	6' Lt	T146	Density
919+25	050117	0-25	6' Lt	T147	Density
924+75	050117	5+25	6' Lt	T148	Density
928+25	050114	0-25	6' Lt	T149	Density
933+75	050114	5+25	6' Lt	T150	Density
938+25	050113	0-25	6' Lt	T151	Density
943+75	050113	5+25	6' Lt	T152	Density
Plant	-----	-----	-----	BA20	Bulk
Plant	-----	-----	-----	BA21	Bulk
Plant	-----	-----	-----	BA22	Bulk

APPENDIX D

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Photo 1. Primed Subgrade



Photo 2. FWD Testing on Top of Base Layer



Photo 3. Nuclear Density and Moisture Content Testing on Base Layer



Photo 4. Paving Asphalt Treated Base



Photo 5. Paving Contractor



Photo 6. Signs Used to Indicate Section Locations During Construction



Photo 7. Installation of Edge Drains



Photo 8. Edge Drain Pipe Installation



Photo 9. Fitting the Outflow Junction in the Edge Drain



Photo 10. Backfilling the Edge Drain Trench



Photo 11. The Asphalt Plant



Photo 12. Fabric Beneath the PATB



Photo 13. Transition from DGAB to PATB Sections



Photo 14. Placement of PATB



Photo 15. Elevation Readings on Top of Finished PATB



Photo 16. Bulk Sample of Asphalt Concrete



Photo 17. Placement of Asphalt Treated Base on DGAB



Photo 18. Installation of WIM System